
From: Allen, Laura
To: Allen, Laura; Smith, Roxanne; Hull, George; Slotkin, Ron; Hart, Daniel; Orquina, Jessica; Davis, Jay; Purchia, Liz; Abrams, Dan; Valentine, Julia; Milbourn, Cathy; Daguiard, Robert; Kowalski, Kennedy; Hanley, Mary; Perry, Dale; Lee, Monica
CC: Harrison, Melissa
Sent: 6/1/2015 5:52:28 PM
Subject: HF Public Affairs meeting

Hey folks- we will use this time to review the tick tock for the HF assessment. We'll go over the info below in more detail. Thanks, and see you then!

Ex. 5

Ex. 5

From: Frithsen, Jeff
To: Frithsen, Jeff; Hanley, Mary; Gibbons, Dayna; Allen, Laura
CC: Marks, Teresa
Sent: 5/28/2015 6:25:00 AM
Subject: HFDWA: Last comments on revised executive summary
Attachments: **Ex. 5**

I'm trying to schedule time early this morning to get last comments on the revised executive summary. I'm hoping this might work for folks.

The latest version of the executive summary was sent out late yesterday afternoon and is also attached below.

Jeff

From: Burke, Thomas
To: Burke, Thomas; Hanley, Mary; Pahl, Dale; Allen, Laura; Purchia, Liz; Frithsen, Jeff; Smith, Kelley; Teichman, Kevin; Briskin, Jeanne; Gibbons, Dayna; Matthews, Lisa; Guido.DeHoratiis@hq.doe.gov; druss@usgs.gov
CC: Wiser, Nathan; Hauchman, Fred; Burden, Susan; Gant, Paula
Sent: 5/15/2015 2:51:44 PM
Subject: EPA / DOE HF Call

CT: Kelley Smith, Smith.Kelley@epa.gov

Notes: Holding this time for a call between DOE and EPA. We are looking for a list of other invitees and confirmation that this time will work from DOE.

On May 13, 2015, at 5:13 PM, DeHoratiis, Guido <Guido.DeHoratiis@hq.doe.gov> wrote:

Ex. 5

From: Allen, Laura
To: Valentine, Julia; Hanley, Mary; Smith, Paula; Carolyn Hubbard (Hubbard.Carolyn@epa.gov); Gibbons, Dayna; Purchia, Liz; Gray, David; D'Andrea, Michael; Matthews, Lisa; Perry, Dale; Maloney, Kelsey
CC: Lee, Monica; Mylott, Richard; McClain-Vanderpool, Lisa
Sent: 5/15/2015 11:53:09 AM
Subject: Chat about HF Case Studies messaging

Hey all- I had to shift the meeting time slightly so I hope it can still work for everyone.

Thanks again.

Hi all- as I mentioned earlier, we will go over the HF case studies messaging and get input from the PADs. I believe all of the ORD briefings for the states and RAs will be completed by this point, so hopefully this discussion can be informed by those.

We will circulate the final case studies messaging before this meeting, so we can discuss in detail.

Thanks!

Conference line:

Ex. 6

From: Matthews, Lisa
To: Matthews, Lisa; Garvin, Shawn; Early, William; D'Andrea, Michael; Marks, Teresa; Burke, Thomas; Hanley, Mary; Perry, Dale; Sonich-Mullin, Cynthia; Smith, Kelly; Smith, Kelley; Orme-Zavaleta, Jennifer; Sullivan, Kate; Gibbons, Dayna; Frithsen, Jeff; Zambrana, Jose
CC: Kadeli, Lek; Gillespie, Andrew; Allen, Laura; Purchia, Liz; Hubbard, Carolyn; Maloney, Kelsey; White, Terri-A; Thomas, Christopher
Sent: 5/12/2015 10:22:00 AM
Subject: Brief PA state officials on NEPA and SWPA case studies and water availability report
Attachments: HF PA case study briefing draft agenda.docx

Ex. 6

Ex. 6

Shawn Garvin, Regional Administrator, US EPA Region 3
Bill Early, Deputy Regional Administrator, US EPA Region 3
Michael D'Andrea, PAD

POC -

Lisa Matthews

Ex. 6

Michael Bueno 202-564-5051

**Briefing for Pennsylvania State Agencies on
EPA's Retrospective Case Studies in NE and SW Pennsylvania and
Water Acquisition Report**

Ex. 6

Ex. 6

**May 15, 2015
1:30-2:30 pm EDT**

Purpose: Briefing on three EPA reports, *Retrospective Case Study in Northeastern Pennsylvania, Retrospective Case Study in Southwestern Pennsylvania, and Case Study Analysis of the Impacts of Water Acquisition for Hydraulic Fracturing on Local Water Availability* (focus on Susquehanna River Basin). ***The information presented at this meeting and discussed is embargoed until publicly released.***

Draft Agenda

Ex. 5

From: Matthews, Lisa
To: Matthews, Lisa; Garvin, Shawn; Early, William; Hedman, Susan; Kaplan, Robert; Burke, Thomas; Marks, Teresa; Frithsen, Jeff; Gibbons, Dayna; Smith, Kelley; Bueno, Michael; D'Andrea, Michael
CC: Perry, Dale; Allen, Laura; Purchia, Liz; Hubbard, Carolyn; Maloney, Kelsey
Sent: 5/12/2015 10:21:33 AM
Subject: Brief PA and OH state officials on Draft Assessment
Attachments: HF state briefing draft agenda.docx

Ex. 6

Ex. 6

POC -

Lisa Matthews

Ex. 6

Michael Bueno 202-564-5051

**Briefing for States on EPA's Draft Hydraulic Fracturing Drinking Water Assessment -
Pennsylvania & Ohio**

Ex. 6

Ex. 6

**May 15, 2015
10:00am – 12:00 pm EDT**

Purpose: Briefing on the EPA's draft report, *Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources*. This assessment provides an evaluation of the potential impacts of hydraulic fracturing on drinking water resources and identifies key vulnerabilities. ***The information presented at this meeting and discussed is embargoed until publicly released.***

Draft Agenda

Ex. 5

From: Burke, Thomas
To: Burke, Thomas; Gibbons, Dayna; Smith, Kelley; Matthews, Lisa; Frithsen, Jeff; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Smith, Kelly
CC: Kadeli, Lek; Kavlock, Robert; Blackburn, Elizabeth; Allen, Laura
Sent: 5/8/2015 12:24:54 PM
Subject: HF DW Study State Presentation and Messaging discussion
Attachments: Draft Press Release jpv (6_lalp-5 8 15).docx

Ex. 6

From: Smith, Kelley on behalf of Burke, Thomas
To: Gibbons, Dayna; Smith, Kelley; Matthews, Lisa; Frithsen, Jeff; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Smith, Kelly
CC: Kadeli, Lek; Kavlock, Robert; Blackburn, Elizabeth; Allen, Laura
Sent: 5/8/2015 12:32:45 PM
Subject: HF DW Study State Presentation and Messaging discussion
Attachments: Ex. 5

Ex. 6

From: Allen, Laura
To: Smith, Roxanne; Hull, George; Slotkin, Ron; Hart, Daniel; Orquina, Jessica; Davis, Jay; Purchia, Liz; Abrams, Dan; Valentine, Julia; Milbourn, Cathy; Daguiard, Robert; Kowalski, Kennedy; Hanley, Mary; Perry, Dale; Lee, Monica
Sent: 6/1/2015 5:52:31 PM
Subject: HF Public Affairs meeting

Hey folks- we will use this time to review the tick tock for the HF assessment. We'll go over the info below in more detail. Thanks, and see you then!

Ex. 5

Ex. 5

From: Allen, Laura
To: Hanley, Mary; Carolyn Hubbard (Hubbard.Carolyn@epa.gov); Gibbons, Dayna; D'Andrea, Michael; Matthews, Lisa; Perry, Dale; Maloney, Kelsey; schaffer, joan; White, Terri-A
CC: Lee, Monica; Purchia, Liz
Sent: 5/28/2015 12:53:09 PM
Subject: Canceled: Region 3 chat about HF assessment/case studies

Sorry folks, this time does not work for Dayna. I will work on rescheduling.

Hey all- this is to reconvene on the HF case studies messaging. Hopefully this time works for everyone. Thanks!

Phone

Ex. 6

From: Allen, Laura
To: Hanley, Mary; Carolyn Hubbard (Hubbard.Carolyn@epa.gov); Gibbons, Dayna; D'Andrea, Michael; Matthews, Lisa; Perry, Dale; Maloney, Kelsey; schaffer, joan; White, Terri-A
CC: Lee, Monica; Purchia, Liz
Sent: 5/27/2015 10:38:51 AM
Subject: Region 3 chat about HF assessment/case studies

Hey all- this is to reconvene on the HF case studies messaging. Hopefully this time works for everyone. Thanks!

Phone

Ex. 6

From: Ridley, Caroline
To: Solomon, Sarah; Bates, William; Beak, Doug; Bergdale, Amy; Briskin, Jeanne; Bueno, Michael; Burden, Susan; Butler, Barbara; Clark, Christopher; Cluff, Maryam; Daiss, Rebecca; Dean, Jill; Deniz (Inci) Demirkanli; Fleming, Megan; Ford, Robert; Frithsen, Jeff; Gibbons, Dayna; Henderson, Michelle; Hillenbrand, Charles; Houck, Keith; Houk, Virginia; Impellitteri, Christopher; Jonathan.Koplos; **Ex. 4**; Ken Klewicki (Ken.Klewicki); **Ex. 4**; Knightes, Chris; Kraemer, Stephen; Landis, Matthew; LeDuc, Stephen; Ludwig, Ralph; MaryEllen.Tuccillo; **Ex. 4**; Matthews, Lisa; Meza-Cuadra, Claudia; Mravik, Susan; Oberley, Gregory; Overbay, Michael; Richards, Matthew; Roberts, Cindy; Schumacher, Brian; Shari.Ring@cadmusgroup.com; Sharkey, Susan; Singer, Alison; Smith, Kelly; Souders, Steve; Stanek, John; Sullivan, Kate; Tinsley, Chuck; Todd, Jason; Watkins, Stephen; Weaver, Jim; Wilkin, Rick; Williams, Larke; Wiser, Nathan; Yohannes, Lia; Yost, Erin
CC: Tong-Argao, Sania; Williams, Joe; Auerbacher, Kevin; Bergman, Ronald; Biddle, Lisa; Carey, Kyle; Devir, Brian; Drees, Lauren; Elkins, Timothy; Ferguson, Holly; Foley, Gary; Fritz, Greg; Gillespie, Andrew; Ginsberg, Marilyn; Hanley, Adrian; Hauchman, Fred; Hyde, Tinka; Itkin, Cheryl; Jann, Stephen; Jewett, David; Johnson, Lora; Lewis, Paul; Little, Stephen; Matuszko, Jan; McDonald, Michael E.; Miller, Andy; Mottl, Nathan; Norris, Gary; Olszewski, John; O'Neill, Sandra; Orme-Zavaleta, Jennifer; Pachnowski, Maya; Parikh, Pooja; Patterson, Craig; Piantanida, David; Pyne, Jaclyn; Robinson, Bonnie; Seltzer, Mark; Slimak, Michael; Sonich-Mullin, Cynthia; Soto, Vicki; Stewart, Andrew; Suarez, Luis; Teichman, Kevin; Trovato, Ramona; Vandegrift, Steve; Vandenberg, John; vanDrunick, Suzanne; Wilson, Scott; Zambrana, Jose; Zobrist, Marcus
Sent: 7/7/2015 4:36:06 PM
Subject: HFDWA monthly call

We will be providing a short update about the rollout of the draft assessment and final ORD reports last month, as well as giving information about upcoming/ongoing activities related to the study.

Ex. 6

This monthly conference call will focus on updating all those working on the hydraulic fracturing study and the assessment, and other interested individuals and offices around the Agency, on the progress of the Hydraulic Fracking Drinking Water Assessment. Information will also be shared about reports and manuscripts coming out of the research study, as well as other hydraulic fracturing-related activities in program and regional offices. Opportunity will be provided to ask questions of the assessment team.

Please send agenda items by 4pm on Tuesday. An agenda will be sent by 9:30am the day of the meeting.

AGENDA
Bi-weekly HF Status
2:15 – 3:00 pm
June 25, 2015

July Forum Update, Teresa Marks, Jim Kenney, 15 mins

Ex. 5

Other?

Topics for Administrator Bi-weekly? 5 mins

From: Ridley, Caroline
To: Bates, William; Beak, Doug; Bergdale, Amy; Briskin, Jeanne; Bueno, Michael; Burden, Susan; Burgoon, Lyle; Butler, Barbara; Clark, Christopher; Cluff, Maryam; Daiss, Rebecca; Dean, Jill; Deniz (Inci) Demirkanli; Fleming, Megan; Ford, Robert; Frithsen, Jeff; Gibbons, Dayna; Henderson, Michelle; Hillenbrand, Charles; Houck, Keith; Houk, Virginia; Impellitteri, Christopher; Jonathan.Koplos; **Ex. 4**; Ken Klewicki; **Ex. 4**; Knightes, Chris; Kraemer, Stephen; Landis, Matthew; LeDuc, Stephen; Ludwig, Ralph; MaryEllen.Tuccillo; **Ex. 4**; Matthews, Lisa; Meza-Cuadra, Claudia; Mravik, Susan; Oberley, Gregory; Overbay, Michael; Richards, Matthew; Roberts, Cindy; Schumacher, Brian; Shari.Ring; **Ex. 4**; Sharkey, Susan; Singer, Alison; Smith, Kelly; Souders, Steve; Stanek, John; Sullivan, Kate; Tinsley, Chuck; Todd, Jason; Watkins, Stephen; Weaver, Jim; Wilkin, Rick; Williams, Larke; Wiser, Nathan; Yohannes, Lia; Yost, Erin; Solomon, Sarah
CC: Auerbacher, Kevin; Bergman, Ronald; Biddle, Lisa; Carey, Kyle; Devir, Brian; Drees, Lauren; Elkins, Timothy; Ferguson, Holly; Foley, Gary; Fritz, Greg; Gillespie, Andrew; Ginsberg, Marilyn; Hanley, Adrian; Hauchman, Fred; Hyde, Tinka; Itkin, Cheryl; Jann, Stephen; Jewett, David; Johnson, Lora; Lewis, Paul; Little, Stephen; Matuszko, Jan; McDonald, Michael E.; Miller, Andy; Mottl, Nathan; Norris, Gary; Olszewski, John; O'Neill, Sandra; Orme-Zavaleta, Jennifer; Pachnowski, Maya; Parikh, Pooja; Patterson, Craig; Piantanida, David; Pyne, Jaclyn; Robinson, Bonnie; Seltzer, Mark; Slimak, Michael; Sonich-Mullin, Cynthia; Soto, Vicki; Stewart, Andrew; Suarez, Luis; Teichman, Kevin; Trovato, Ramona; Vandegrift, Steve; Vandenberg, John; vanDrunick, Suzanne; Wilson, Scott; Zambrana, Jose; Zobrist, Marcus; Tong-Argao, Sania
Sent: 6/8/2015 9:39:31 AM
Subject: Canceled: HFDWA monthly call

Ex. 6

This monthly conference call will focus on updating all those working on the hydraulic fracturing study and the assessment, and other interested individuals and offices around the Agency, on the progress of the Hydraulic Fracking Drinking Water Assessment. Information will also be shared about reports and manuscripts coming out of the research study, as well as other hydraulic fracturing-related activities in program and regional offices. Opportunity will be provided to ask questions of the assessment team.

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To: Bates, William; Beak, Doug; Bergdale, Amy; Briskin, Jeanne; Bueno, Michael; Burden, Susan; Burgoon, Lyle; Butler, Barbara; Clark, Christopher; Cluff, Maryam; Daiss, Rebecca; Dean, Jill; Deniz (Inci) Demirkanli; Fleming, Megan; Ford, Robert; Frithsen, Jeff; Gibbons, Dayna; Henderson, Michelle; Hillenbrand, Charles; Houck, Keith; Houk, Virginia; Impellitteri, Christopher; Jonathan.Koplos; **Ex. 4**; Ken Klewicki; **Ex. 4**; Knightes, Chris; Kraemer, Stephen; Landis, Matthew; LeDuc, Stephen; Ludwig, Ralph; MaryEllen.Tuccillo; **Ex. 4**; Matthews, Lisa; Meza-Cuadra, Claudia; Mravik, Susan; Oberley, Gregory; Overbay, Michael; Richards, Matthew; Roberts, Cindy; Schumacher, Brian; Shari.Ring; **Ex. 4**; Sharkey, Susan; Singer, Alison; Smith, Kelly; Souders, Steve; Stanek, John; Sullivan, Kate; Tinsley, Chuck; Todd, Jason; Watkins, Stephen; Weaver, Jim; Wilkin, Rick; Williams, Larke; Wiser, Nathan; Yohannes, Lia; Yost, Erin; Solomon, Sarah
CC: Auerbacher, Kevin; Bergman, Ronald; Biddle, Lisa; Carey, Kyle; Devir, Brian; Drees, Lauren; Elkins, Timothy; Ferguson, Holly; Foley, Gary; Fritz, Greg; Gillespie, Andrew; Ginsberg, Marilyn; Hanley, Adrian; Hauchman, Fred; Hyde, Tinka; Itkin, Cheryl; Jann, Stephen; Jewett, David; Johnson, Lora; Lewis, Paul; Little, Stephen; Matuszko, Jan; McDonald, Michael E.; Miller, Andy; Mottl, Nathan; Norris, Gary; Olszewski, John; O'Neill, Sandra; Orme-Zavaleta, Jennifer; Pachnowski, Maya; Parikh, Pooja; Patterson, Craig; Piantanida, David; Pyne, Jaclyn; Robinson, Bonnie; Seltzer, Mark; Slimak, Michael; Sonich-Mullin, Cynthia; Soto, Vicki; Stewart, Andrew; Suarez, Luis; Teichman, Kevin; Trovato, Ramona; Vandegrift, Steve; Vandenberg, John; vanDrunick, Suzanne; Wilson, Scott; Zambrana, Jose; Zobrist, Marcus; Tong-Argao, Sania
Sent: 5/13/2015 9:59:36 AM
Subject: HFDWA monthly call

Today we will have a short update on the final EPA HF study products and the draft HF assessment that are scheduled to be release this month.

Ex. 6

This monthly conference call will focus on updating all those working on the hydraulic fracturing study and the assessment, and other interested individuals and offices around the Agency, on the progress of the Hydraulic Fracking Drinking Water Assessment. Information will also be shared about reports and manuscripts coming out of the research study, as well as other hydraulic fracturing-related activities in program and regional offices. Opportunity will be provided to ask questions of the assessment team.

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To: Bates, William; Beak, Doug; Bergdale, Amy; Briskin, Jeanne; Bueno, Michael; Burden, Susan; Burgoon, Lyle; Butler, Barbara; Clark, Christopher; Cluff, Maryam; Daiss, Rebecca; Dean, Jill; Deniz (Inci) Demirkanli; Fleming, Megan; Ford, Robert; Frithsen, Jeff; Gibbons, Dayna; Henderson, Michelle; Hillenbrand, Charles; Houck, Keith; Houk, Virginia; Impellitteri, Christopher; Jonathan.Koplos; Ex. 4 Ken Klewicki Ex. 4; Knightes, Chris; Kraemer, Stephen; Landis, Matthew; LeDuc, Stephen; Ludwig, Ralph; MaryEllen.Tuccillo; Ex. 4 Matthews, Lisa; Meza-Cuadra, Claudia; Mravik, Susan; Oberley, Gregory; Overbay, Michael; Richards, Matthew; Roberts, Cindy; Schumacher, Brian; Shari.Ring; Ex. 4 Sharkey, Susan; Singer, Alison; Smith, Kelly; Souders, Steve; Stanek, John; Sullivan, Kate; Tinsley, Chuck; Todd, Jason; Watkins, Stephen; Weaver, Jim; Wilkin, Rick; Williams, Larke; Wiser, Nathan; Yohannes, Lia; Yost, Erin
CC: Auerbacher, Kevin; Bergman, Ronald; Biddle, Lisa; Carey, Kyle; Devir, Brian; Drees, Lauren; Elkins, Timothy; Ferguson, Holly; Foley, Gary; Fritz, Greg; Gillespie, Andrew; Ginsberg, Marilyn; Hanley, Adrian; Hauchman, Fred; Hyde, Tinka; Itkin, Cheryl; Jann, Stephen; Jewett, David; Johnson, Lora; Lewis, Paul; Little, Stephen; Matuszko, Jan; McDonald, Michael E.; Miller, Andy; Mottl, Nathan; Norris, Gary; Olszewski, John; O'Neill, Sandra; Orme-Zavaleta, Jennifer; Pachnowski, Maya; Parikh, Pooja; Patterson, Craig; Piantanida, David; Pyne, Jaclyn; Robinson, Bonnie; Seltzer, Mark; Slimak, Michael; Sonich-Mullin, Cynthia; Soto, Vicki; Stewart, Andrew; Suarez, Luis; Teichman, Kevin; Trovato, Ramona; Vandegrift, Steve; Vandenberg, John; vanDrunick, Suzanne; Wilson, Scott; Zambrana, Jose; Zobrist, Marcus; Tong-Argao, Sania
Sent: 4/7/2015 3:43:06 PM
Subject: HFDWA monthly call

Ex. 6

This monthly conference call will focus on updating all those working on the hydraulic fracturing study and the assessment, and other interested individuals and offices around the Agency, on the progress of the Hydraulic Fracking Drinking Water Assessment. Information will also be shared about reports and manuscripts coming out of the research study, as well as other hydraulic fracturing-related activities in program and regional offices. Opportunity will be provided to ask questions of the assessment team.

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Office of Water

EPA 821-F-15-002

www.epa.gov

March 2015

Proposed Effluent Limitations Guidelines and Standards for Oil and Gas Extraction

Summary

EPA proposes technology-based pretreatment standards under the Clean Water Act for discharges of pollutants into publicly owned treatment works (POTWs) from existing and new unconventional oil and natural gas (UOG) extraction facilities. The proposed rule would better protect public health, the environment, and the operational integrity of POTWs by establishing pretreatment standards that would prevent the discharge of pollutants in wastewater from onshore UOG extraction facilities to POTWs. This proposed rule would fill a gap in existing federal wastewater regulations to ensure that the current practice of not sending wastewater discharges from this sector to POTWs continues into the future.

Background

Responsible development of America's oil and gas resources offers important economic, energy security, and environmental benefits. EPA is working with states and other stakeholders to understand and address potential impacts of hydraulic fracturing, an important process involved in producing UOG, so the public has confidence that oil and natural gas production will proceed in a safe and responsible manner. EPA is moving forward with several

initiatives to provide regulatory clarity with respect to existing laws and using existing authorities, where appropriate, to enhance public health and environmental safeguards.

UOG extraction wastewater can be generated in large quantities and contain constituents that are potentially harmful to human health and the environment. Wastewater from UOG wells often contains high concentrations of salt content, also called total dissolved solids or TDS. The wastewater can also contain various organic chemicals, inorganic chemicals, metals, and naturally-occurring radioactive materials (also referred to as technologically enhanced naturally occurring radioactive material or TENORM). This potentially harmful wastewater creates a need for appropriate wastewater management infrastructure and practices.

Historically, operators primarily managed their wastewater via underground injection in disposal wells (where available). Where UOG wells were drilled in areas with limited underground injection wells, and/or there was a lack of wastewater management alternatives, it became more common

for operators to look to public and private wastewater treatment facilities to manage their wastewater. Because they are not typical of POTW influent wastewater, some UOG extraction wastewater constituents:

- can be discharged, untreated, from the POTW to the receiving stream
- can disrupt the operation of the POTW (for example, by inhibiting biological treatment)
- can accumulate in biosolids (also called sewage sludge), limiting their use, and
- can facilitate the formation of harmful disinfection by-products.

Based on the information reviewed as part of this proposed rulemaking, this proposed prohibition of discharges to POTWs reflects current industry practice. EPA has not identified any existing onshore UOG extraction facilities that currently discharge wastewater to POTWs. However, because onshore unconventional oil and gas extraction facilities have discharged to POTWs in the past, and because the potential remains that some facilities can consider discharging to POTWs in the future, EPA proposes this rule.

The data reviewed by EPA show that the UOG extraction industry is not currently managing wastewaters by sending them to POTWs. Therefore, the proposed rule causes no incremental change to current industry practice that EPA measured as compliance costs or monetized benefits.

Still, EPA has considered that while states, localities, and POTWs are not currently approving these wastewaters for acceptance at POTWs, some POTWs continue to receive requests to accept UOG extraction wastewater. This proposed rule would provide regulatory certainty and would eliminate the burden on POTWs to analyze such requests.

For More Information

You can view the Federal Register Notice on EPA's website for Unconventional Extraction in the Oil and Gas Industry at

<http://water.epa.gov/scitech/wastetech/guide/oilandgas/unconv.cfm>. In addition, the proposed rule will be available at <http://www.regulations.gov> under Docket ID: EPA-HQ-OW-2014-0598. The public comment period for this proposed rule is 60 days. You may also contact Lisa Biddle at Biddle.Lisa@epa.gov.

From: Ridley, Caroline
To: Bates, William; Beak, Doug; Bergdale, Amy; Briskin, Jeanne; Bueno, Michael; Burden, Susan; Burgoon, Lyle; Butler, Barbara; Clark, Christopher; Cluff, Maryam; Daiss, Rebecca; Dean, Jill; Deniz (Inci) Demirkanli; Fleming, Megan; Ford, Robert; Frithsen, Jeff; Gibbons, Dayna; Henderson, Michelle; Hillenbrand, Charles; Houck, Keith; Houk, Virginia; Impellitteri, Christopher; Jonathan.Koplos; **Ex. 4**; Ken Klewicki; **Ex. 4**; Knightes, Chris; Kraemer, Stephen; Landis, Matthew; LeDuc, Stephen; Ludwig, Ralph; MaryEllen.Tuccillo; **Ex. 4**; Matthews, Lisa; Meza-Cuadra, Claudia; Mravik, Susan; Oberley, Gregory; Overbay, Michael; Richards, Matthew; Roberts, Cindy; Schumacher, Brian; Shari.Ring; **Ex. 4**; Sharkey, Susan; Singer, Alison; Smith, Kelly; Souders, Steve; Stanek, John; Sullivan, Kate; Tinsley, Chuck; Todd, Jason; Watkins, Stephen; Weaver, Jim; Wilkin, Rick; Williams, Larke; Wiser, Nathan; Yohannes, Lia; Yost, Erin
CC: Tong-Argao, Sania; Pritts, Jesse; Auerbacher, Kevin; Bergman, Ronald; Biddle, Lisa; Carey, Kyle; Devir, Brian; Drees, Lauren; Elkins, Timothy; Ferguson, Holly; Foley, Gary; Fritz, Greg; Gillespie, Andrew; Ginsberg, Marilyn; Hanley, Adrian; Hauchman, Fred; Hyde, Tinka; Itkin, Cheryl; Jann, Stephen; Jewett, David; Johnson, Lora; Lewis, Paul; Little, Stephen; Matuszko, Jan; McDonald, Michael E.; Miller, Andy; Mottl, Nathan; Norris, Gary; Olszewski, John; O'Neill, Sandra; Orme-Zavaleta, Jennifer; Pachnowski, Maya; Parikh, Pooja; Patterson, Craig; Piantanida, David; Pyne, Jaclyn; Robinson, Bonnie; Seltzer, Mark; Slimak, Michael; Sonich-Mullin, Cynthia; Soto, Vicki; Stewart, Andrew; Suarez, Luis; Teichman, Kevin; Trovato, Ramona; Vandegrift, Steve; Vandenberg, John; vanDrunick, Suzanne; Wilson, Scott; Zambrana, Jose; Zobrist, Marcus
Sent: 3/11/2015 10:45:32 AM
Subject: Canceled: HFDWA monthly call

Ex. 6

This monthly conference call will focus on updating all those working on the hydraulic fracturing study and the assessment, and other interested individuals and offices around the Agency, on the progress of the Hydraulic Fracking Drinking Water Assessment. Information will also be shared about reports and manuscripts coming out of the research study, as well as other hydraulic fracturing-related activities in program and regional offices. Opportunity will be provided to ask questions of the assessment team.

Please send agenda items by 4pm on Tuesday. An agenda will be sent by 9:30am the day of the meeting.

From: Shifflett, Jeffrey (CONTR)
To: Shifflett, Jeffrey (CONTR); Williams, Larke; Lenahan, Marni; Coleman, Margaret; Vivian Nolan (vpnolan@usgs.gov); Briskin, Jeanne
CC: Martinez, Barbara
Sent: 7/7/2015 9:30:32 AM
Subject: MAC Next Steps on EOP Presentation--Water Quality
Attachments: MAC Accomplishments_Draft_07July2015.pptx

Attached is the most recent version of the EOP slide deck.

From: Briskin, Jeanne
To: Briskin, Jeanne
Sent: 6/4/2015 2:57:41 PM
Subject: U.S. EPA: EPA Employee Webinar - Draft Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources

For details, click here: <https://www.eventbrite.com/e/us-epa-epa-employee-webinar-draft-assessment-of-the-potential-impacts-of-hydraulic-fracturing-for-tickets-17229572114>

From: Briskin, Jeanne
To: Briskin, Jeanne
Sent: 6/4/2015 2:56:18 PM
Subject: webinar for staff

As part of the Federal Multiagency Collaboration on Unconventional Oil and Gas Research, you are invited to join EPA's staff webinar on Tuesday, June 9th at 2:00 pm EDT to learn about the Agency's recently released Draft Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources. Ex. 6 The webinar will include an overview of the assessment and an opportunity to ask questions.

Please register on EventBrite for the conference information:

Ex. 6Ex. 6

Ex. 6 Please share this invitation with interested staff from your office. If possible, we request that participants register and join the call in groups to allow for greater participation.

From: Maloney, Kelsey
To: Maloney, Kelsey; Gibbons, Dayna; Frithsen, Jeff; Matthews, Lisa; Briskin, Jeanne; Smith, Kelley; Perry, Dale; Hubbard, Carolyn; Burke, Thomas; Bueno Michael
CC: Allen, Laura; Purchia, Liz; Valentine, Julia; Hull, George; Milbourn, Cathy; Teichman, Kevin; Simunek, Diane; Ridley, Caroline
Sent: 6/2/2015 2:45:10 PM
Subject: HF Study Draft Assessment Public Webinar - 2

From: Matthews, Lisa
To: Matthews, Lisa; Frithsen, Jeff; Gibbons, Dayna
CC: Sonich-Mullin, Cynthia; Zambrana, Jose; Bueno, Michael; Briskin, Jeanne; Kavlock, Robert; Orme-Zavaleta, Jennifer
Sent: 6/2/2015 9:29:37 AM
Subject: Briefing for Technical Roundtable on Draft HFDWA

Draft Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources

Greetings Roundtable participants,

Today, the EPA released its *Draft Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources* for public comment and peer review, along with nine final peer-reviewed EPA technical reports completed as part of the study. The draft assessment provides the most complete compilation of scientific data to date on the potential impacts to drinking water resources from hydraulic fracturing activities. The draft assessment integrates a broad literature review, with results from EPA-led research projects and input from stakeholders through outreach efforts.

Learn more about the Scientific Advisory Board's (SAB) peer review process for the draft assessment.

The EPA will be hosting a special webinar for our Technical Roundtable participants on **Wednesday, June 10, 2015 from 3:00 to 4:00 pm EDT** to provide a brief overview of the draft assessment, the key findings, and the review process.

Ex. 6

Thank you for your interest in the EPA's Study of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources.

Regards,
Lisa Matthews
US EPA Office of Research and Development
202-564-6669 office

Ex. 6

matthews.lisa@epa.gov

From: Phillips, Anna
To: Phillips, Anna; Briskin, Jeanne
Sent: 5/26/2015 6:53:49 PM
Subject: HF Assessment Outreach

We probably won't need the full 30 minutes but just in case...

From: Briskin, Jeanne
To: Briskin, Jeanne
Sent: 5/14/2015 3:33:08 PM
Subject: Briefing for States on EPA's Draft Hydraulic Fracturing Drinking Water Assessment - Pennsylvania & Ohio

From: Burke, Thomas
To: Burke, Thomas; Gibbons, Dayna; Smith, Kelley; Matthews, Lisa; Frithsen, Jeff; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Smith, Kelly
CC: Kadeli, Lek; Kavlock, Robert; Blackburn, Elizabeth; Allen, Laura
Sent: 5/7/2015 12:49:14 PM
Subject: HF DW Study State Presentation and Messaging discussion
Attachments: Draft Press Release jpv (6_lalp-5 8 15).docx

Ex. 6

From: Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Matthews, Lisa; Gibbons, Dayna; Teichman, Kevin; Zambrana, Jose; Briskin, Jeanne; Smith, Kelly
CC: Kadeli, Lek; Kavlock, Robert; Blackburn, Elizabeth
Sent: 5/5/2015 10:01:28 PM
Subject: HF Retrospective State Presentation and Messaging discussion

Ex. 6

From: Pat Lambert
To: Pat Lambert; laford@blm.gov; rfulkerson@usbr.gov; rmccormi@blm.gov; lauren.dempsey@us.af.mil; alan_ellsworth@nps.gov; pahamilt@usgs.gov; Workman, Rosemary; andrew_hautzinger@fws.gov; bill_hansen@nps.gov; ryan_m_velasco@ceq.eop.gov; Gorke, Roger; john.r.d'antonio@usace.army.mil; marc.d.kodack.civ@mail.mil; Forrest.S.Melton@nasa.gov; gstevens@blm.gov; cbrown@westgov.org; LBrekke@usbr.gov; Tony Willardson; Metchis, Karen; rboyd@blm.gov; bradley.doorn@nasa.gov; timothy.gelston@fema.dhs.gov; eevenson@usgs.gov; Michael Strobel; ada.benavides@usace.army.mil; mbeberle@fs.fed.us; Roger Pulwarty - NOAA Federal; craig.zamuda@hq.doe.gov; muriel_j_murray; Ex. 6; Peterson, Jeff; jathomas02@fs.fed.us; kevin.werner@noaa.gov; dethompson@usbr.gov; bowenz@usgs.gov; Briskin, Jeanne
Sent: 4/28/2015 3:18:51 PM
Subject: Invitation: WestFAST Webinar Series #4: Selected Federal Water-Resour... @ Thu Apr 30, 2015 9:30am - 11am (ericstevens@wswc.utah.gov)
Attachments: invite.ics

WestFAST Webinar Series #4: Selected Federal Water-Resource Activities on Hydraulic Fracturing

[more details »](#)

WestFAST Webinar #4: Selected Federal activities on hydraulic fracturing

Please join us for the fourth installment of the WestFAST Special Topics Webinar Series: Selected Federal activities on hydraulic fracturing. We will be briefed on three water-resource assessment areas on unconventional oil and gas development activities:

- EPA study of potential impacts of hydraulic fracturing on drinking water resources, EPA Office of Research and Development
- Trends in water quality in areas of unconventional oil and gas development – Watershed/surface-water resources, Zach Bowen Ecosystem Dynamics Branch, USGS Fort Collins Science Center
- Injection induced earthquakes, USGS Earthquake Science Center

The Western States Federal Agency Support Team (WestFAST), is a collaboration between 13 Federal agencies with water management responsibilities in the West. WestFAST was established to support the Western States Water Council (WSWC) and the Western Governors' Association (WGA) in coordinating Federal efforts regarding water issues. In addition, WestFAST representatives collaborate among themselves to effectively and efficiently carry out their agencies' water-related missions. In this role, WestFAST has begun a "Special Topics" Webinar Series to present, and allow discussion on, a range of WestFAST federal agency water-resource activities with the objective of improving awareness of and collaboration in water programs.

Topic: WestFAST Seminary Series #4

Date: Thursday, April 30, 2015

Time: 9:30 am, Mountain Daylight Time (Denver, GMT-06:00)

Meeting number: **Ex. 6**

Meeting password: (This meeting does not require a password.)

Please click the link below to see more information, or to join the meeting.

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and a meeting password (if provided) to join the meeting.

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<https://usgs.webex.com/usgs/j.php?MTID=me1f7209771676db510aeaf42af3a4154>

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in advance of the meeting as follows:

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2. Visit <http://usgs.webex.com>
3. Select Setup / Meeting manager (left side of page)

For Help with WebEx

- WebEx setup help: 1-866-229-3239
- Info: <https://usgs.webex.com/>, click USGS Help (at left)
- USGS account questions: gs_help_webinar@usgs.gov

To contact Patrick Lambert, call **Ex. 6** or

send a message to this address: **Ex. 6**

When Thu Apr 30, 2015 9:30am – 11am Mountain Time

Video call https://plus.google.com/hangouts/_/utah.gov/patlambert

Calendar **Ex. 6**

Who • Pat Lambert - organizer

Ex. 6

Ex. 6

- briskin.jeanne@epa.gov

Going? [Yes](#) - [Maybe](#) - [No more options »](#)

Invitation from [Google Calendar](#)

You are receiving this courtesy email at the account briskin.jeanne@epa.gov because you are an attendee of this event.

To stop receiving future updates for this event, decline this event. Alternatively you can sign up for a Google account at <https://www.google.com/calendar/> and control your notification settings for your entire calendar.

WestFAST Webinar Series #4: Selected Federal Water-Resource Activities on Hydraulic Fracturing

20150430T153000Z
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-//Google Inc//Google Calendar 70.9054//EN

Version

2.0

CALSCALE

GREGORIAN

METHOD

REQUEST

Start Date/Time

20150430T153000Z

End Date/Time

20150430T170000Z

DTSTAMP

20150428T191841Z

ORGANIZER (CN=Pat Lambert)

mailto:patlambert@swc.utah.gov

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Attendee	<u>mailto:rboyd@blm.gov</u>
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Attendee	<u>mailto:bradley.doorn@nasa.gov</u>
Role	REQ-PARTICIPANT
RSVP	TRUE
Attendee	<u>mailto:timothy.gelston@fema.dhs.gov</u>
Role	REQ-PARTICIPANT
RSVP	TRUE
Attendee	<u>mailto:eevenson@usgs.gov</u>
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Role REQ-PARTICIPANT
RSVP TRUE

CREATED

20150423T150022Z

Description

WestFAST Webinar #4: Selected Federal activities on hydraulic fracturing

Please join us for the fourth installment of the WestFAST Special Topics Webinar Series: Selected Federal activities on hydraulic fracturing. We will be briefed on three water-resource assessment areas on unconventional oil and gas development activities:

- EPA study of potential impacts of hydraulic fracturing on drinking water resources, EPA Office of Research and Development
- Trends in water quality in areas of unconventional oil and gas development – Watershed/surface-water resources, Zach Bowen Ecosystem Dynamics Branch, USGS Fort Collins Science Center
- Injection induced earthquakes, USGS Earthquake Science Center

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Topic: WestFAST Seminary Series #4 \nDate: Thursday, April 30, 2015

Time: 9:30 am, Mountain Daylight Time (Denver, GMT-06:00)

Meeting number: **Ex. 6**

Meeting password: (This meeting does not require a password.)

Please click the link below to see more information, or to join the meeting.

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To contact Patrick Lambert, call **Ex. 6** or

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Ex. 6

Ex. 6

Last Modified

20150428T191841Z

Location

Sequence Number

0

Status

CONFIRMED

Summary

WestFAST Webinar Series #4: Selected Federal Water-Resource Activities on Hydraulic Fracturing

Time Transparency

OPAQUE

From: Ridley, Caroline
To: Ridley, Caroline; Waltzer, Suzanne; Weitz, Melissa; Macpherson, Alex; Moore, Bruce; Burden, Susan
CC: LeDuc, Stephen; Wiser, Nathan; Briskin, Jeanne; Frithsen, Jeff
Sent: 4/28/2015 11:59:11 AM
Subject: OAR estimates of re-fracturing

Join us for a discussion of re-fracturing frequency, as estimated by OAR.

Additional perspective on fracturing in older wells will be provided by author(s) of ORD's Well File Review paper.

From: Frithsen, Jeff
To: Frithsen, Jeff; Briskin, Jeanne; Gibbons, Dayna; Matthews, Lisa; Teichman, Kevin; Zambrana, Jose; Burden, Susan; LeDuc, Stephen; Ridley, Caroline; Hauchman, Fred; Piantanida, David; Houk, Virginia; Sonich-Mullin, Cynthia; Richards, Matthew; vanDrunick, Suzanne; Smith, Kelley; Smith, Kelly; Orme-Zavaleta, Jennifer; Vandenberg, John; Williams, Larke
Sent: 4/17/2015 2:58:01 PM
Subject: HF ORD Leadership Conference Call
Attachments: Canceled: HF ORD Leadership Conference Call

Ex. 6

From:
To: Frithsen, Jeff; Vandenberg, John; Richards, Matthew; Burden, Susan; Sonich-Mullin, Cynthia; vanDrunick, Suzanne; Ridley, Caroline; Piantanida, David; LeDuc, Stephen; Gibbons, Dayna; Smith, Kelley; Teichman, Kevin; Houk, Virginia; Williams, Larke; Matthews, Lisa; Smith, Kelly; Briskin, Jeanne; Zambrana, Jose; Orme-Zavaleta, Jennifer; Hauchman, Fred
Sent:
Subject: Canceled: HF ORD Leadership Conference Call

I am canceling today's meeting as there are many folks that are tied-up with today's ORD EC/MC meeting.

Because of the hard work and dedicated efforts by an army of folks that have been working for many years on ORD's hydraulic fracturing study, we are in the "T-1" countdown. Tomorrow, the agency will release nine HF Study reports (2 from NERL, 2 from OSP and 5 from NRMRL) and one rather robust draft assessment report.

Thanks all!

Jeff

From: Briskin, Jeanne
To: Briskin, Jeanne
Sent: 4/8/2015 1:29:47 PM
Subject: hold for sab review of HF report
Attachments: Untitled.msg; Untitled1.msg; Untitled2.msg

From: Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Smith, Kelley; Kavlock, Robert; Vandenberg, John; Stanek, John; Yost, Erin; Matthews, Lisa; Gibbons, Dayna
Sent: 4/7/2015 11:26:18 AM
Subject: HF Discussion: DW Chapter 9 and Tox and QSAR reports

CT: Jeff Frithsen / Kelley Smith

Ex. 6

From: Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; LeDuc, Stephen; Fleming, Megan; Ridley, Caroline
CC: Kavlock, Robert; Kadeli, Lek
Sent: 3/27/2015 1:06:27 PM
Subject: HF Drinking Water Chapter Comments: Chapter 4

CT: Nathan Gentry

Notes: Discussion of comments for Chapter 4

From: Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John
CC: Kavlock, Robert; Kadeli, Lek; Jonathan.Koplos; **Ex. 6**; Shari.Ring; **Ex. 6**; MaryEllen.Tuccillo; **Ex. 6**; Vandenberg, John; Walsh, Debra; Yost, Erin; Burgoon, Lyle; Fleming, Megan
Sent: 3/27/2015 1:02:55 PM
Subject: HF Drinking Water Chapter Comments: Executive Summary & chapter 4 (Discussion part 2 - if needed)

CT: Nathan Gentry

Ex. 6

Staff:

Notes: Discussion of comments for Chapters 6-10 and executive summary

From: Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John
CC: Kadeli, Lek; Kavlock, Robert; Jonathan.Koplos; **Ex. 6**; Shari.Ring; **Ex. 6**; MaryEllen.Tuccillo; **Ex. 6**; Vandenberg, John; Walsh, Debra; Burgoon, Lyle; Yost, Erin; Fleming, Megan; Knightes, Chris
Sent: 3/27/2015 1:02:10 PM
Subject: HF Drinking Water Chapter Comments: Executive Summary & chapters 6 & 9 (Discussion part 1)

CT: Nathan Gentry

Ex. 6

Staff:

Notes: Discussion of comments for Chapters 6-10 and executive summary

From: Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Yohannes, Lia; Knightes, Chris; Zambrana, Jose; Briskin, Jeanne; Teichman, Kevin
CC: Kadeli, Lek; Kavlock, Robert; Jonathan.Koplos **Ex. 6**
Sent: 3/27/2015 12:57:33 PM
Subject: HF Drinking Water Chapter Comments: 1,2,3, and 5

CT: Nathan Gentry

Teleconference: Details TBD

Staff:

Notes: Discussion of comments for Chapters 1-3 and 5.

From: Williams, Larke
To: Williams, Larke; Briskin, Jeanne
Sent: 3/17/2015 7:55:12 PM
Subject: Chem Mix Comments Review

Hi Jeanne,

First, let me thank you for giving very thoughtful comments on the Chemical Mixing chapter! Your deep understanding of HF and consideration of what information would be helpful to the reader really comes through in your review. I wish we could have benefitted from your insight earlier.

I am deciphering your handwriting pretty well, and have a few places where clarification would be helpful. If you are available, lets quickly go through comments that I was unable to read.

Thanks,
Larke

From: Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Gibbons, Dayna; Matthews, Lisa; Smith, Kelley; Dean, Jill; Teichman, Kevin; Briskin, Jeanne
Sent: 3/11/2015 1:27:46 PM
Subject: HF Team Check in

Note new call-in number.

Check in time to discuss timing of FracFocus and any prep needed for WH meeting on Friday.

From: Briskin, Jeanne
To: Briskin, Jeanne; Hauchman, Fred
CC: Burden, Susan
Sent: 3/11/2015 11:55:04 AM
Subject: discuss HF spills approach

From: Yohannes, Lia
To: Yohannes, Lia; Briskin, Jeanne
Sent: 3/10/2015 4:58:01 PM
Subject: Ch3 follow-up

Ex. 5

From: Ridley, Caroline
To: Solomon, Sarah; Bates, William; Beak, Doug; Bergdale, Amy; Briskin, Jeanne; Bueno, Michael; Burden, Susan; Butler, Barbara; Clark, Christopher; Cluff, Maryam; Daiss, Rebecca; Dean, Jill; Deniz (Inci) Demirkanli; Fleming, Megan; Ford, Robert; Frithsen, Jeff; Gibbons, Dayna; Henderson, Michelle; Hillenbrand, Charles; Houck, Keith; Houk, Virginia; Impellitteri, Christopher; Jonathan.Koplos; **Ex. 4**; Ken Klewicki (**Ex. 4**); Knightes, Chris; Kraemer, Stephen; Landis, Matthew; LeDuc, Stephen; Ludwig, Ralph; MaryEllen.Tuccillo; **Ex. 4**; Matthews, Lisa; Meza-Cuadra, Claudia; Mravik, Susan; Oberley, Gregory; Overbay, Michael; Richards, Matthew; Roberts, Cindy; Schumacher, Brian; Shari.Ring; **Ex. 4**; Sharkey, Susan; Singer, Alison; Smith, Kelly; Souders, Steve; Stanek, John; Sullivan, Kate; Tinsley, Chuck; Todd, Jason; Watkins, Stephen; Weaver, Jim; Wilkin, Rick; Williams, Larke; Wiser, Nathan; Yohannes, Lia; Yost, Erin
CC: Tong-Argao, Sania; Williams, Joe; Auerbacher, Kevin; Bergman, Ronald; Biddle, Lisa; Carey, Kyle; Devir, Brian; Drees, Lauren; Elkins, Timothy; Ferguson, Holly; Foley, Gary; Fritz, Greg; Gillespie, Andrew; Ginsberg, Marilyn; Hanley, Adrian; Hauchman, Fred; Hyde, Tinka; Itkin, Cheryl; Jann, Stephen; Jewett, David; Johnson, Lora; Lewis, Paul; Little, Stephen; Matuszko, Jan; McDonald, Michael E.; Miller, Andy; Mottl, Nathan; Norris, Gary; Olszewski, John; O'Neill, Sandra; Orme-Zavaleta, Jennifer; Pachnowski, Maya; Parikh, Pooja; Patterson, Craig; Piantanida, David; Pyne, Jaclyn; Robinson, Bonnie; Seltzer, Mark; Slimak, Michael; Sonich-Mullin, Cynthia; Soto, Vicki; Stewart, Andrew; Suarez, Luis; Teichman, Kevin; Trovato, Ramona; Vandegrift, Steve; Vandenberg, John; vanDrunick, Suzanne; Wilson, Scott; Zambrana, Jose; Zobrist, Marcus
Sent: 7/7/2015 4:36:06 PM
Subject: HFDWA monthly call

We will be providing a short update about the rollout of the draft assessment and final ORD reports last month, as well as giving information about upcoming/ongoing activities related to the study.

Ex. 6

This monthly conference call will focus on updating all those working on the hydraulic fracturing study and the assessment, and other interested individuals and offices around the Agency, on the progress of the Hydraulic Fracking Drinking Water Assessment. Information will also be shared about reports and manuscripts coming out of the research study, as well as other hydraulic fracturing-related activities in program and regional offices. Opportunity will be provided to ask questions of the assessment team.

Please send agenda items by 4pm on Tuesday. An agenda will be sent by 9:30am the day of the meeting.

From: Shifflett, Jeffrey (CONTR)
To: Williams, Larke; Lenahan, Marni; Coleman, Margaret; Vivian Nolan (vpnolan@usgs.gov); Briskin, Jeanne
CC: Martinez, Barbara
Sent: 7/7/2015 12:40:25 PM
Subject: MAC Next Steps on EOP Presentation--Water Quality
Attachments: MAC Accomplishments_Draft_07July2015.pptx

Attached is the most recent version of the EOP slide deck.

From: Ridley, Caroline
To: Bates, William; Beak, Doug; Bergdale, Amy; Briskin, Jeanne; Bueno, Michael; Burden, Susan; Burgoon, Lyle; Butler, Barbara; Clark, Christopher; Cluff, Maryam; Daiss, Rebecca; Dean, Jill; Deniz (Inci) Demirkanli; Fleming, Megan; Ford, Robert; Frithsen, Jeff; Gibbons, Dayna; Henderson, Michelle; Hillenbrand, Charles; Houck, Keith; Houk, Virginia; Impellitteri, Christopher; Jonathan.Koplos; **Ex. 4**; Ken Klewicki; **Ex. 4**; Knightes, Chris; Kraemer, Stephen; Landis, Matthew; LeDuc, Stephen; Ludwig, Ralph; MaryEllen.Tuccillo; **Ex. 4**; Matthews, Lisa; Meza-Cuadra, Claudia; Mravik, Susan; Oberley, Gregory; Overbay, Michael; Richards, Matthew; Roberts, Cindy; Schumacher, Brian; Shari.Ring; **Ex. 4**; Sharkey, Susan; Singer, Alison; Smith, Kelly; Souders, Steve; Stanek, John; Sullivan, Kate; Tinsley, Chuck; Todd, Jason; Watkins, Stephen; Weaver, Jim; Wilkin, Rick; Williams, Larke; Wiser, Nathan; Yohannes, Lia; Yost, Erin; Solomon, Sarah
CC: Auerbacher, Kevin; Bergman, Ronald; Biddle, Lisa; Carey, Kyle; Devir, Brian; Drees, Lauren; Elkins, Timothy; Ferguson, Holly; Foley, Gary; Fritz, Greg; Gillespie, Andrew; Ginsberg, Marilyn; Hanley, Adrian; Hauchman, Fred; Hyde, Tinka; Itkin, Cheryl; Jann, Stephen; Jewett, David; Johnson, Lora; Lewis, Paul; Little, Stephen; Matuszko, Jan; McDonald, Michael E.; Miller, Andy; Mottl, Nathan; Norris, Gary; Olszewski, John; O'Neill, Sandra; Orme-Zavaleta, Jennifer; Pachnowski, Maya; Parikh, Pooja; Patterson, Craig; Piantanida, David; Pyne, Jaclyn; Robinson, Bonnie; Seltzer, Mark; Slimak, Michael; Sonich-Mullin, Cynthia; Soto, Vicki; Stewart, Andrew; Suarez, Luis; Teichman, Kevin; Trovato, Ramona; Vandegrift, Steve; Vandenberg, John; vanDrunick, Suzanne; Wilson, Scott; Zambrana, Jose; Zobrist, Marcus; Tong-Argao, Sania
Sent: 5/13/2015 9:59:36 AM
Subject: HFDWA monthly call

Today we will have a short update on the final EPA HF study products and the draft HF assessment that are scheduled to be release this month.

Ex. 6

This monthly conference call will focus on updating all those working on the hydraulic fracturing study and the assessment, and other interested individuals and offices around the Agency, on the progress of the Hydraulic Fracking Drinking Water Assessment. Information will also be shared about reports and manuscripts coming out of the research study, as well as other hydraulic fracturing-related activities in program and regional offices. Opportunity will be provided to ask questions of the assessment team.

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From: Gentry, Nathan on behalf of Burke, Thomas
To: Gibbons, Dayna; Smith, Kelley; Matthews, Lisa; Frithsen, Jeff; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Smith, Kelly
CC: Kadeli, Lek; Kavlock, Robert; Blackburn, Elizabeth
Sent: 5/7/2015 5:14:50 PM
Subject: Canceled: HOLD: Possible last chance time for in person HF Retrospective or HF DW Study messaging or presentation Discussion time

Ex. 6

Note: Ideally we will not need this time, but we are placing a hold in the event that it is needed after the meeting earlier in the day (10:30 - 12:00 PM)

From: Smith, Kelley on behalf of Burke, Thomas
To: Frithsen, Jeff; Smith, Kelley; Matthews, Lisa; Gibbons, Dayna; Teichman, Kevin; Zambrana, Jose; Briskin, Jeanne; Smith, Kelly
CC: Kadeli, Lek; Kavlock, Robert; Blackburn, Elizabeth
Sent: 5/7/2015 12:47:45 PM
Subject: HF Retrospective State Presentation and Messaging discussion

Ex. 6

From: Frithsen, Jeff
To: Briskin, Jeanne; Gibbons, Dayna; Matthews, Lisa; Teichman, Kevin; Zambrana, Jose; Burden, Susan; LeDuc, Stephen; Ridley, Caroline; Hauchman, Fred; Piantanida, David; Houk, Virginia; Sonich-Mullin, Cynthia; Richards, Matthew; vanDrunick, Suzanne; Smith, Kelley; Smith, Kelly; Orme-Zavaleta, Jennifer; Vandenberg, John; Williams, Larke
Sent: 4/22/2015 9:00:59 AM
Subject: Canceled: HF ORD Leadership Conference Call

Team:

I am cancelling today's HF ORD Leadership Conference Call. No special reason, just much going on today and thought it better to free up everyone's calendar.

In separate and previous emails, I have shared with everyone: 1) The draft SAB schedule; 2) an update on the HF Study Products, and; 3) An outline and schedule for outreach activities for the HF study products and draft assessment. Those materials provide a quick update as to most activities related to the HF drinking water study. There are other activities related to QA and probably a few things on the congressional front. WE will talk about those next week.

Thanks again for everyone's focused efforts to get the HF study products and draft assessment over the finish line. We are making great progress. Another month of caffeine infusions and we will be there!

Jeff

From: Gentry, Nathan on behalf of Burke, Thomas
To: Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; LeDuc, Stephen; Fleming, Megan; Ridley, Caroline
CC: Kavlock, Robert; Kadeli, Lek
Sent: 4/1/2015 2:42:02 PM
Subject: HF Drinking Water Chapter Comments: Chapter 4

CT: Nathan Gentry

Notes: Discussion of comments for Chapter 4

From: Smith, Kelley on behalf of Burke, Thomas
To: Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John
CC: Kavlock, Robert; Kadeli, Lek; Jonathan.Koplos; Ex. 4; Shari.Ring; Ex. 4; MaryEllen.Tuccillo; Ex. 4; Vandenberg, John; Walsh, Debra; Yost, Erin; Burgoon, Lyle; Fleming, Megan
Sent: 3/31/2015 10:51:18 AM
Subject: HF Drinking Water Chapter Comments: Executive Summary & chapter 4 (Discussion part 2 - if needed)

CT: Nathan Gentry

Teleconference: Ex. 6

Staff:

Notes: Discussion of comments for Chapters 6-10 and executive summary

From: Smith, Kelley on behalf of Burke, Thomas
To: Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John
CC: Kadeli, Lek; Kavlock, Robert; Jonathan.Koplos **Ex. 4**; Shari.Ring **Ex. 4**; MaryEllen.Tuccillo **Ex. 4**; Vandenberg, John; Walsh, Debra; Burgoon, Lyle; Yost, Erin; Fleming, Megan; Knightes, Chris
Sent: 3/31/2015 10:51:10 AM
Subject: HF Drinking Water Chapter Comments: Executive Summary & chapters 6 & 9 (Discussion part 1)

CT: Nathan Gentry

Teleconference: **Ex. 6**

Staff:

Notes: Discussion of comments for Chapters 6-10 and executive summary

From: Gentry, Nathan on behalf of Burke, Thomas
To: Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Yohannes, Lia; Knightes, Chris; Zambrana, Jose; Briskin, Jeanne; Teichman, Kevin
CC: Kadeli, Lek; Kavlock, Robert; Jonathan.Koplos; **Ex. 4**
Sent: 3/30/2015 9:06:29 AM
Subject: HF Drinking Water Chapter Comments: 1,2,3, and 5

CT: Nathan Gentry

Teleconference: Details TBD

Staff:

Notes: Discussion of comments for Chapters 1-3 and 5.

From: Burden, Susan
To: Briskin, Jeanne
Sent: 3/11/2015 1:01:08 PM
Subject: Tentative: discuss HF spills approach

From: Ridley, Caroline
To: Bates, William; Beak, Doug; Bergdale, Amy; Briskin, Jeanne; Bueno, Michael; Burden, Susan; Burgoon, Lyle; Butler, Barbara; Clark, Christopher; Cluff, Maryam; Daiss, Rebecca; Dean, Jill; Deniz (Inci) Demirkanli; Fleming, Megan; Ford, Robert; Frithsen, Jeff; Gibbons, Dayna; Henderson, Michelle; Hillenbrand, Charles; Houck, Keith; Houk, Virginia; Impellitteri, Christopher; Jonathan.Koplos; **Ex. 4**; Ken Klewicki; **Ex. 4**; Knightes, Chris; Kraemer, Stephen; Landis, Matthew; LeDuc, Stephen; Ludwig, Ralph; MaryEllen.Tuccillo; **Ex. 4**; Matthews, Lisa; Meza-Cuadra, Claudia; Mravik, Susan; Oberley, Gregory; Overbay, Michael; Richards, Matthew; Roberts, Cindy; Schumacher, Brian; Shari.Ring; **Ex. 4**; Sharkey, Susan; Singer, Alison; Smith, Kelly; Souders, Steve; Stanek, John; Sullivan, Kate; Tinsley, Chuck; Todd, Jason; Watkins, Stephen; Weaver, Jim; Wilkin, Rick; Williams, Larke; Wiser, Nathan; Yohannes, Lia; Yost, Erin
CC: Tong-Argao, Sania; Pritts, Jesse; Auerbacher, Kevin; Bergman, Ronald; Biddle, Lisa; Carey, Kyle; Devir, Brian; Drees, Lauren; Elkins, Timothy; Ferguson, Holly; Foley, Gary; Fritz, Greg; Gillespie, Andrew; Ginsberg, Marilyn; Hanley, Adrian; Hauchman, Fred; Hyde, Tinka; Itkin, Cheryl; Jann, Stephen; Jewett, David; Johnson, Lora; Lewis, Paul; Little, Stephen; Matuszko, Jan; McDonald, Michael E.; Miller, Andy; Mottl, Nathan; Norris, Gary; Olszewski, John; O'Neill, Sandra; Orme-Zavaleta, Jennifer; Pachnowski, Maya; Parikh, Pooja; Patterson, Craig; Piantanida, David; Pyne, Jaclyn; Robinson, Bonnie; Seltzer, Mark; Slimak, Michael; Sonich-Mullin, Cynthia; Soto, Vicki; Stewart, Andrew; Suarez, Luis; Teichman, Kevin; Trovato, Ramona; Vandegrift, Steve; Vandenberg, John; vanDrunick, Suzanne; Wilson, Scott; Zambrana, Jose; Zobrist, Marcus
Sent: 3/11/2015 10:45:32 AM
Subject: Canceled: HFDWA monthly call

Ex. 6

This monthly conference call will focus on updating all those working on the hydraulic fracturing study and the assessment, and other interested individuals and offices around the Agency, on the progress of the Hydraulic Fracking Drinking Water Assessment. Information will also be shared about reports and manuscripts coming out of the research study, as well as other hydraulic fracturing-related activities in program and regional offices. Opportunity will be provided to ask questions of the assessment team.

Please send agenda items by 4pm on Tuesday. An agenda will be sent by 9:30am the day of the meeting.

From: Frithsen, Jeff
To: Hauchman, Fred; Teichman, Kevin; Briskin, Jeanne; Kavlock, Robert
Sent: 3/7/2015 7:25:49 AM
Subject: HF: Discussion of schedule for WFR#1 and Spills Report

Ex. 5

From: Frithsen, Jeff
To: Frithsen, Jeff; Matthews, Lisa; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna
CC: Smith, Kelley
Sent: 3/19/2015 8:24:21 AM
Subject: HF Core Team Huddle
Attachments: Untitled.msg; Untitled1.msg; Untitled2.msg; Untitled3.msg; Untitled4.msg; Untitled5.msg; Untitled6.msg; Untitled7.msg; Untitled8.msg; Untitled9.msg; Canceled: HF Core Team Huddle

From:
To: Frithsen, Jeff; Briskin, Jeanne; Gibbons, Dayna; Matthews, Lisa; Teichman, Kevin; Zambrana, Jose
Sent:
Subject:

Starting Monday 3/23/2015, please use the teleconference number listed above for the HF Core Team Huddle. The huddle is scheduled weekly until the end of the year. I expect that we will not have to meet all Mondays and that when we do meet, we will not need the entire hour. Thanks.

From:
To: Frithsen, Jeff; Briskin, Jeanne; Gibbons, Dayna; Matthews, Lisa; Teichman, Kevin; Zambrana, Jose
Sent:
Subject:

For 4/20/15 only, I would like to move our meeting to 3:00. The rescheduling is needed due to an earlier meeting with AO staff to get comments on the draft HFDWA.

Agenda items for today:

Ex. 5

Thanks.

From:
To: Frithsen, Jeff; Briskin, Jeanne; Gibbons, Dayna; Matthews, Lisa; Teichman, Kevin; Zambrana, Jose
Sent:
Subject:

I need to change our usual meeting time for the huddle as today there is a conflict with the briefing with the administrator.

From:
To: Frithsen, Jeff; Briskin, Jeanne; Gibbons, Dayna; Matthews, Lisa; Teichman, Kevin; Zambrana, Jose
Sent:
Subject:

This week's meeting conflicts with the EOP briefing. I suggest we reschedule to Tuesday. This OK with folks?

Jeff

From:
To: Frithsen, Jeff; Matthews, Lisa; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna; Smith, Kelley
Sent:
Subject:

Confirming that we should caucus today.

1) Status of HF Study reports (all are completed and going through process of converting to 508 compliant files)

2) Status of communication materials for HF Study Reports

Non-Responsive

From:
To: Frithsen, Jeff; Matthews, Lisa; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna
CC: Smith, Kelley
Sent:
Subject:

Rescheduling the 5/25 meeting to 5/26 to accommodate the memorial day holiday.

From:
To: Frithsen, Jeff; Matthews, Lisa; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna
CC: Smith, Kelley
Sent:
Subject:

We need to move our weekly HF Core Team Huddle once again. I scheduled on Tuesday right on top of the agency briefing on the assessment.

Let's try for Wednesday, 6/10/15 at 1:30.

The objective of this meeting is to identify any loose ends concerning the HF Study and the HF draft assessment that might need attention.

My list of loose ends includes the following:

- 1) An outstanding FOIA
- 2) Responses to public and press inquiries
- 3) Well-deserved awards for the HF team
- 4) Printing of the HF study reports and draft assessment
- 5) Finalizing charge questions for the SAB
- 6) QFRs

And I'm sure there are a few more that have taken a back seat to finalizing the report.

Jeff

From:
Sent:
Subject:

Resending Calendar invite.....

From:
To: Frithsen, Jeff; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna; Matthews, Lisa
CC: Smith, Kelley
Sent:
Subject:

Rescheduling for this week.

Ex. 6

From: Frithsen, Jeff
To: Frithsen, Jeff; Matthews, Lisa; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna
CC: Smith, Kelley
Sent: 7/20/2015 1:21:12 PM
Subject: Canceled: HF Core Team Huddle

I suggest we cancel today's HF Core Team Huddle. We don't appear to have pressing agenda items for us to discuss as a group.

Ex. 6

Cheers,

Jeff

From: Briskin, Jeanne
To: Phillips, Anna
Sent: 5/26/2015 6:55:26 PM
Subject: Accepted: HF Assessment Outreach

From: Briskin, Jeanne
To: Breysse, Patrick N. (CDC/ONDIEH/NCEH)
Sent: 5/21/2015 10:10:56 AM
Subject: Accepted: FW: New EPA Report about Fracking

From: Briskin, Jeanne
To: Burke, Thomas
Sent: 5/7/2015 1:13:43 PM
Subject: Tentative: HOLD: Possible last chance time for in person HF Retrospective or HF DW Study messaging or presentation Discussion time

From: Briskin, Jeanne
To: Burke, Thomas
Sent: 4/7/2015 12:29:17 PM
Subject: Accepted: HF Discussion: DW Chapter 9 and Tox and QSAR reports

From: Briskin, Jeanne
To: Hauchman, Fred
CC: Burden, Susan
Sent: 3/11/2015 11:55:07 AM
Subject: discuss HF spills approach

From: Briskin, Jeanne
To: Frithsen, Jeff
Sent: 3/9/2015 12:03:38 PM
Subject: Accepted: HF: Discussion of schedule for WFR#1 and Spills Report

From: Wiser, Nathan
To: Wiser, Nathan; Joffe, Andrea; Tinsley, Chuck
CC: Burden, Susan
Sent: 6/12/2015 4:54:32 PM
Subject: WFR 2 team
Attachments: Untitled.msg; Untitled1.msg; Untitled2.msg

To provide updates on activities and feedback on work being done. I was able to reserve this room through August 2015.

On June 15:

Ex. 5

From:
To: Wiser, Nathan; Joffe, Andrea; Tinsley, Chuck
CC: Burden, Susan
Sent:
Subject:

For Monday August 10, 2015:

Ex. 5

From:
To: Wiser, Nathan; Joffe, Andrea; Tinsley, Chuck
CC: Burden, Susan
Sent:
Subject:

Changing from 9am to 10am.

To provide updates on activities and feedback on work being done. I was able to reserve this room through August 2015.

Ex. 5

From: Burden, Susan
To: Burden, Susan; Ridley, Caroline; Wiser, Nathan; Shari.Ring@cadmusgroup.com
CC: LeDuc, Stephen; Jonathan Koplos
Sent: 6/10/2015 3:26:34 PM
Subject: WFR2
Attachments: WFR2 Figures DRAFT 061515.docx; WFR2 Outline DRAFT 060415.docx; WFR2 Summary DRAFT 061515.docx

Hi all,

See attached for some background documents for this afternoon's phone call.

~~~~~

Hi all,

Let's meet to discuss the contents of WFR2. Nathan and I want to check in with the assessment team to make sure that we're providing useful information for Chapter 6.

Meeting materials will be sent out on Monday.

Thanks,

Susan

**From:** Sharkey, Susan  
**To:** Sharkey, Susan; Burden, Susan; MaryEllen.Tuccillo; Jonathan.Koplos; William Jobs  
**CC:** Glen Boyd; William Jobs  
**Sent:** 5/1/2015 9:06:29 AM  
**Subject:** FF Chems & Cas WA 7-58

**Ex. 6**

Moved meeting from Tuesday to Thursday

See email, text included here:

**From:** Jonathan Koplos  
**Sent:** Thursday, April 30, 2015 5:15 PM  
**To:** Sharkey, Susan; Burden, Susan  
**Cc:** Glen Boyd; MaryEllen.Tuccillo  
**Subject:** FW: Technical Direction WA 7-58: Expanded FF Chems w CAS & No Name & Source Check

**Ex. 5**

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**From:** Burden, Susan  
**To:** Burden, Susan; Watkins, Stephen  
**Sent:** 4/21/2015 2:05:26 PM  
**Subject:** QA Review of Spills and WFR

Hi Steve,

I want to make sure I don't lose track of the QA review of the HF reports, so I wanted to get a meeting set up for us to discuss the results of your QA review. Does this time work for you?

Thanks,

Susan

---

**From:** Ridley, Caroline  
**To:** Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;  
Jonathan.Koplos; Ex. 4; Yohannes, Lia; Fleming, Megan; Knightes, Chris;  
Shari.Ring; Ex. 4; Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo; Ex. 4  
Stanek, John  
**Sent:** 4/6/2015 3:47:57 PM  
**Subject:** HFDWA weekly chapter leads call  
**Attachments:** Ex. 5

Continuation of our weekly call.

Agenda to be sent week of.

---

**From:**

**To:** Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;  
Jonathan.Koplos; Ex. 4; Yohannes, Lia; Fleming, Megan; Knightes, Chris;  
Shari.Ring; Ex. 4; Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo; Ex. 4  
Stanek, John

**Sent:**

**Subject:**

Agenda

Chapter status updates

~~~~~

Continuation of our weekly call.

Agenda to be sent week of.

From:
To: Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;
Jonathan.Koplos; [Ex. 4] Yohannes, Lia; Fleming, Megan; Knightes, Chris;
Shari.Ring; [Ex. 4] Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo; [Ex. 4]
Stanek, John
CC: Daiss, Rebecca
Sent:
Subject:

Please call in for a very brief touch-base- thanks!

~~~~~  
Continuation of our weekly call.

Agenda to be sent week of.

---

**From:**

**To:** Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;  
Jonathan.Koplos **Ex. 4**; Yohannes, Lia; Fleming, Megan; Knightes, Chris;  
Shari.Ring **Ex. 4**; Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo **Ex. 4**;  
Stanek, John; Solomon, Sarah

**Sent:****Subject:**

Sorry for the schedule shuffle. Please make every effort to attend, or to at least send a chapter representative in your place if you absolutely cannot make it.

Agenda

Schedule and status

PA letters of determination



**From:**

**To:** Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;  
Jonathan.Koplos; **Ex. 4** Yohannes, Lia; Fleming, Megan; Knightes, Chris;  
Shari.Ring; **Ex. 4** Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo; **Ex. 4**  
Stanek, John; Solomon, Sarah

**Sent:**

**Subject:**

Thanks for being flexible with the timing of this meeting.

Agenda

**Ex. 5**

~~~~~  
Continuation of our weekly call.

Agenda to be sent week of.

From:

To: Ridley, Caroline; Solomon, Sarah; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;
Jonathan.Koplos Ex. 4; Yohannes, Lia; Fleming, Megan; Knightes, Chris;
Shari.Ring Ex. 4; Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo Ex. 4
Stanek, John
CC: Yost, Erin

Sent:**Subject:**

Again- apologies for the calendar shuffle.

We will be talking progress towards assembling a complete draft of the HFDWA by Monday May 11.

~~~~~  
Continuation of our weekly call.

Agenda to be sent week of.

---

**From:**

**To:** Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;  
Jonathan.Koplos **Ex. 4** Yohannes, Lia; Fleming, Megan; Knightes, Chris;  
Shari.Ring **Ex. 4** Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo **Ex. 4**  
Stanek, John; Solomon, Sarah

**Sent:****Subject:**

Sorry for the shifting times. Trying to find a slot that works for most of us ...

Continuation of our weekly call.

Agenda to be sent week of.

---

**From:**

**To:** Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;  
Jonathan.Koplos [Ex. 4]; Yohannes, Lia; Fleming, Megan; Knightes, Chris;  
Shari.Ring [Ex. 4]; Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo [Ex. 4]  
Stanek, John; Solomon, Sarah

**Sent:****Subject:**

We'll be touching base about final edits to the ES/chapter 10, plus the last steps running up to public release of our draft- exciting!

~~~~~

Continuation of our weekly call.

Agenda to be sent week of.

From: Ridley, Caroline
To: Ridley, Caroline; Burden, Susan; LeDuc, Stephen; Jonathan.Koplos [Ex. 4] Yohannes, Lia; Fleming, Megan; Knightes, Chris; Shari.Ring [Ex. 4] Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo [Ex. 4] Stanek, John; Frithsen, Jeff; Solomon, Sarah
Sent: 5/26/2015 12:28:52 PM
Subject: HFDWA weekly chapter leads call

Continuation of our weekly call.

Agenda to be sent week of.

From: Ridley, Caroline
To: Yohannes, Lia; Ridley, Caroline; Solomon, Sarah; Frithsen, Jeff;
Jonathan.Koplos; Ex. 4; Knightes, Chris; Burden, Susan; LeDuc, Stephen; Fleming,
Megan; Shari.Ring; Ex. 4; Weaver, Jim; Cluff, Maryam;
MaryEllen.Tuccillo; Ex. 4; Stanek, John
Sent: 5/26/2015 12:37:41 PM
Subject: HFDWA weekly chapter leads call

Agenda

Ex. 5

Continuation of our weekly call.

Agenda to be sent week of.

From: Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John
CC: Kavlock, Robert; Kadeli, Lek; Jonathan.Koplos; **Ex. 4**; Shari.Ring; **Ex. 4**; MaryEllen.Tuccillo; **Ex. 4**; Vandenberg, John; Walsh, Debra; Yost, Erin; Burgoon, Lyle; Fleming, Megan
Sent: 3/27/2015 1:02:57 PM
Subject: HF Drinking Water Chapter Comments: Executive Summary & chapter 4 (Discussion part 2 - if needed)

CT: Nathan Gentry

Teleconference: **Ex. 6**

Staff:

Notes: Discussion of comments for Chapters 6-10 and executive summary

From: Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John
CC: Kadeli, Lek; Kavlock, Robert; Jonathan.Koplos; **Ex. 4**; Shari.Ring; **Ex. 4**; MaryEllen.Tuccillo; **Ex. 4**; Vandenberg, John; Walsh, Debra; Burgoon, Lyle; Yost, Erin; Fleming, Megan; Knightes, Chris
Sent: 3/27/2015 1:02:13 PM
Subject: HF Drinking Water Chapter Comments: Executive Summary & chapters 6 & 9 (Discussion part 1)

CT: Nathan Gentry

Teleconference: **Ex. 6**

Staff:

Notes: Discussion of comments for Chapters 6-10 and executive summary

From: Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Yohannes, Lia; Knightes, Chris; Zambrana, Jose; Briskin, Jeanne; Teichman, Kevin
CC: Kadeli, Lek; Kavlock, Robert; Jonathan.Koplos Ex. 4
Sent: 3/27/2015 12:57:35 PM
Subject: HF Drinking Water Chapter Comments: 1,2,3, and 5

CT: Nathan Gentry

Teleconference: Details TBD

Staff:

Notes: Discussion of comments for Chapters 1-3 and 5.

From: Ridley, Caroline
To: Burden, Susan; Frithsen, Jeff; LeDuc, Stephen; Jonathan.Koplos; **Ex. 4**; Yohannes, Lia; Fleming, Megan; Knightes, Chris; Shari.Ring; **Ex. 4**; Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo; **Ex. 4**; Stanek, John; Solomon, Sarah
Sent: 4/29/2015 9:21:21 AM
Subject: HFDWA weekly chapter leads call

Thanks for being flexible with the timing of this meeting.

Agenda

Ex. 5

~~~~~

Continuation of our weekly call.

Agenda to be sent week of.

**From:** Ridley, Caroline  
**To:** Bates, William; Beak, Doug; Bergdale, Amy; Briskin, Jeanne; Bueno, Michael; Burden, Susan; Burgoon, Lyle; Butler, Barbara; Clark, Christopher; Cluff, Maryam; Daiss, Rebecca; Dean, Jill; Deniz (Inci) Demirkanli; Fleming, Megan; Ford, Robert; Frithsen, Jeff; Gibbons, Dayna; Henderson, Michelle; Hillenbrand, Charles; Houck, Keith; Houk, Virginia; Impellitteri, Christopher; Jonathan.Koplos; **Ex. 4**; Ken Klewicki; **Ex. 4**; Knightes, Chris; Kraemer, Stephen; Landis, Matthew; LeDuc, Stephen; Ludwig, Ralph; MaryEllen.Tuccillo; **Ex. 4**; Matthews, Lisa; Meza-Cuadra, Claudia; Mravik, Susan; Oberley, Gregory; Overbay, Michael; Richards, Matthew; Roberts, Cindy; Schumacher, Brian; Shari.Ring; **Ex. 4**; Sharkey, Susan; Singer, Alison; Smith, Kelly; Souders, Steve; Stanek, John; Sullivan, Kate; Tinsley, Chuck; Todd, Jason; Watkins, Stephen; Weaver, Jim; Wilkin, Rick; Williams, Larke; Wiser, Nathan; Yohannes, Lia; Yost, Erin  
**CC:** Auerbacher, Kevin; Bergman, Ronald; Biddle, Lisa; Carey, Kyle; Devir, Brian; Drees, Lauren; Elkins, Timothy; Ferguson, Holly; Foley, Gary; Fritz, Greg; Gillespie, Andrew; Ginsberg, Marilyn; Hanley, Adrian; Hauchman, Fred; Hyde, Tinka; Itkin, Cheryl; Jann, Stephen; Jewett, David; Johnson, Lora; Lewis, Paul; Little, Stephen; Matuszko, Jan; McDonald, Michael E.; Miller, Andy; Mottl, Nathan; Norris, Gary; Olszewski, John; O'Neill, Sandra; Orme-Zavaleta, Jennifer; Pachnowski, Maya; Parikh, Pooja; Patterson, Craig; Piantanida, David; Pyne, Jaclyn; Robinson, Bonnie; Seltzer, Mark; Slimak, Michael; Sonich-Mullin, Cynthia; Soto, Vicki; Stewart, Andrew; Suarez, Luis; Teichman, Kevin; Trovato, Ramona; Vandegrift, Steve; Vandenberg, John; vanDrunick, Suzanne; Wilson, Scott; Zambrana, Jose; Zobrist, Marcus; Tong-Argao, Sania  
**Sent:** 4/7/2015 3:43:06 PM  
**Subject:** HFDWA monthly call

**Ex. 6**

**Ex. 5**

Please send agenda items by 4pm on Tuesday. An agenda will be sent by 9:30am the day of the meeting.

---

**From:** Smith, Kelley on behalf of Burke, Thomas  
**To:** Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John  
**CC:** Kavlock, Robert; Kadeli, Lek; Jonathan.Koplos; **Ex. 4**; Shari.Ring; **Ex. 4**; MaryEllen.Tuccillo; **Ex. 4**; Vandenberg, John; Walsh, Debra; Yost, Erin; Burgoon, Lyle; Fleming, Megan  
**Sent:** 3/31/2015 10:51:18 AM  
**Subject:** HF Drinking Water Chapter Comments: Executive Summary & chapter 4 (Discussion part 2 - if needed)

CT: Nathan Gentry

Teleconference: **Ex. 6**

Staff:

**Notes:** Discussion of comments for Chapters 6-10 and executive summary

---

**From:** Smith, Kelley on behalf of Burke, Thomas  
**To:** Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John  
**CC:** Kadeli, Lek; Kavlock, Robert; Jonathan.Koplos; Ex. 4; Shari.Ring; Ex. 4; MaryEllen.Tuccillo; Ex. 4; Vandenberg, John; Walsh, Debra; Burgoon, Lyle; Yost, Erin; Fleming, Megan; Knightes, Chris  
**Sent:** 3/31/2015 10:51:10 AM  
**Subject:** HF Drinking Water Chapter Comments: Executive Summary & chapters 6 & 9 (Discussion part 1)

CT: Nathan Gentry

Teleconference: Ex. 6

Staff:

Notes: Discussion of comments for Chapters 6-10 and executive summary

---

**From:** Gentry, Nathan on behalf of Burke, Thomas  
**To:** Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Yohannes, Lia; Knightes, Chris; Zambrana, Jose; Briskin, Jeanne; Teichman, Kevin  
**CC:** Kadeli, Lek; Kavlock, Robert; Jonathan.Koplos; **Ex. 4**  
**Sent:** 3/30/2015 9:06:29 AM  
**Subject:** HF Drinking Water Chapter Comments: 1,2,3, and 5

CT: Nathan Gentry

Teleconference: Details TBD

Staff:

Notes: Discussion of comments for Chapters 1-3 and 5.

**From:** Yohannes, Lia  
**To:** Briskin, Jeanne; Burden, Susan; Daiss, Rebecca; Gibbons, Dayna; Matthews, Lisa; Roberts, Cindy; Sharkey, Susan; Tinsley, Chuck; Watkins, Stephen; Wiser, Nathan; Frithsen, Jeff; LeDuc, Stephen; Cluff, Maryam; Singer, Alison; Williams, Larke; Bueno, Michael; Fleming, Megan; Ridley, Caroline; Dean, Jill; Corona, Elizabeth; Hubbard, Carolyn  
**CC:** Maloney, Kelsey; [Ex. 4] Shari Ring [Ex. 4] Knightes, Chris; MaryEllen Tuccillo [Ex. 4]; Stanek, John; Weaver, Jim; [Ex. 4]  
**Sent:** 3/10/2015 9:38:29 AM  
**Subject:** HF Team Meeting

Hi all,

**Non-Responsive**

Thanks!

**Ex. 6**

Liabeth Yohannes  
Student Services Contractor  
Office of Research and Development  
U.S. Environmental Protection Agency  
e: [Yohannes.lia@epa.gov](mailto:Yohannes.lia@epa.gov)  
p: 202.564.6755

**From:** Ridley, Caroline  
**To:** Burden, Susan; Frithsen, Jeff; LeDuc, Stephen; Jonathan.Koplos; **Ex. 4** Fleming, Megan; Knightes, Chris; Shari.Ring; **Ex. 4** Weaver, Jim; Cluff, Maryam; Impellitteri, Christopher; Stanek, John; MaryEllen.Tuccillo; **Ex. 4** Yohannes, Lia  
**CC:** Deniz (Inci) Demirkanli  
**Sent:** 3/4/2015 10:13:33 AM  
**Subject:** HFDWA weekly chapter leads call

Agenda

Congrats! The draft is out!

# Ex. 5

~~~~~

Continuation of our weekly chapter leads call.

Ex. 6

From: Burden, Susan
To: Burke, Thomas
Sent: 3/27/2015 1:41:55 PM
Subject: Tentative: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Burden, Susan
To: Burke, Thomas
Sent: 3/27/2015 1:41:44 PM
Subject: Tentative: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Burden, Susan
To: Burke, Thomas
Sent: 3/27/2015 1:41:39 PM
Subject: Tentative: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Bond, Brian
To: Bond, Brian; Ragland, Micah; Maddox, Donald; Marks, Teresa; Burke, Thomas; Gentry, Nathan; Hanley, Mary
CC: Fritz, Matthew; Kadeli, Lek
Sent: 6/2/2015 10:59:56 AM
Subject: Fracking Assessment Briefing

From: Gentry, Nathan on behalf of Burke, Thomas
To: Burke, Thomas; tdwelle@nd.gov; Smith, Kelley; Matthews, Lisa
Sent: 5/12/2015 2:59:35 PM
Subject: Discuss Hydraulic Fracturing Retrospective Case Studies Burke/Dwelle

From: Gentry, Nathan on behalf of Burke, Thomas
To: Burke, Thomas; sheila.kuschke@dshs.state.tx.us; Matthews, Lisa; Smith, Kelley
CC: Cole, Kirk (DSHS)
Sent: 5/8/2015 4:10:37 PM
Subject: Discuss Hydraulic Fracturing Retrospective Case Studies Burke/Cole

Please note new call-in number.

With Texas Interim Commissioner of DSHS, Kirk Cole

From: Matthews, Lisa
To: Matthews, Lisa; McGrath, Shaun; Card, Joan; Marks, Teresa; Hanley, Mary; Perry, Dale; Burke, Thomas; Sonich-Mullin, Cynthia; Smith, Kelly; Gibbons, Dayna; Smith, Kelley; Zambrana, Jose
CC: Frithsen, Jeff; Varcoe, Betsy; Bueno, Michael; Kadeli, Lek; Beak, Doug; Lowrance, Richard; Jewett, David; Tom Burke; Ex. 6
Sent: 5/8/2015 11:30:06 AM
Subject: Brief ND state officials on Killdeer case study report
Attachments: Ex. 5

Ex. 6
Ex. 6

Audio will be provided via a call-in line that our operator will manage to ensure only confirmed participants can connect.

Draft agenda and presentation slides attached. The slides are DELIBERATIVE and are not to be shared outside of EPA.

Expected participants:

Krista Carman, State of North Dakota-Office of the Governor (Washington office)
Andrea Travnicek, Senior Policy Advisor, State of North Dakota-Office of the Governor
David Glatt, Chief, Environmental Health Section, ND Department of Health
Lynn Helms, Director, Oil and Gas Division, ND Industrial Commission
Colleen Reinke, Director of Public Information, ND Department of Health

Thank you,
Lisa Matthews
US EPA Office of Research and Development
202-564-6669 office

Ex. 6

**Briefing for North Dakota State Agencies on
EPA's Retrospective Case Study in Killdeer, ND**

Ex. 6

Ex. 6

**May 22, 2015
10:00-11:00 am CDT**

Purpose: Briefing on the EPA's report, *Retrospective Case Study in Killdeer, ND: Study of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources*. ***The information presented at this meeting and discussed is embargoed until publicly released.***

Draft Agenda

Ex. 5

From: Smith, Kelley on behalf of Burke, Thomas
To: Burke, Thomas; Gibbons, Dayna; Smith, Kelley; Matthews, Lisa; Frithsen, Jeff; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Smith, Kelly
CC: Kadeli, Lek; Kavlock, Robert; Blackburn, Elizabeth; Allen, Laura
Sent: 5/7/2015 12:49:05 PM
Subject: HF DW Study State Presentation and Messaging discussion
Attachments: Draft Press Release jpv (6_lalp-5 8 15).docx

Ex. 6

From: Gentry, Nathan on behalf of Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Matthews, Lisa; Gibbons, Dayna; Teichman, Kevin; Zambrana, Jose; Briskin, Jeanne; Smith, Kelly
CC: Kadeli, Lek; Kavlock, Robert; Blackburn, Elizabeth
Sent: 5/5/2015 4:16:37 PM
Subject: HF Retrospective State Presentation and Messaging discussion

Ex. 6

From: Kavlock, Robert
To: Kavlock, Robert; Burke, Thomas
Sent: 4/21/2015 9:24:03 AM
Subject: SAB Hydraulic Fracturing Research Advisory Panel teleconferences

From: Frithsen, Jeff
Sent: Friday, April 17, 2015 4:18 PM
To: Smith, Kelley
Subject: HFDWA: SAB Review

Kelley:

Sharing as FYI and potentially for Tom's Calendar, dates for the SAB review of the HFDWA. The most important date is the ad hoc panel meeting in late October.

Ex. 5

Cheers,
Jeff

From: Hanlon, Edward
Sent: Wednesday, March 18, 2015 7:54 AM
To: Frithsen, Jeff
Cc: Brennan, Thomas
Subject: current schedule for the SAB Hydraulic Fracturing Research Advisory Panel meeting and teleconferences - please pencil these dates into your calendars

Hi Jeff,

Ex. 5

Ex. 5

From: Smith, Kelley on behalf of Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Smith, Kelley; Kavlock, Robert; Vandenberg, John; Stanek, John; Yost, Erin; Matthews, Lisa; Gibbons, Dayna; Kadeli, Lek
CC: Dutton, Steven
Sent: 4/7/2015 11:26:14 AM
Subject: HF Discussion: DW Chapter 9 and Tox and QSAR reports

CT: Jeff Frithsen / Kelley Smith

Ex. 6

From: Smith, Kelley on behalf of Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Teichman, Kevin; Hanley, Mary; Perry, Dale; Kavlock, Robert
Sent: 4/7/2015 11:22:18 AM
Subject: HF Report Discussion

CT: Jeff Frithsen / Kelley Smith

Ex. 6

Staff:

Mary Hanley, AO
Dale Perry, AO
Tom Burke, ORD
Bob Kavlock, ORD
Jeff Frithsen, ORD
Kevin Teichman, ORD
Kelley Smith, ORD

Note: Part one of two meetings to discuss Water Acquisition and Source Apportionment (Part 1 should focus on priority items). Jeff Frithsen will send a second invite for later in the day to cover the rest.

Please accept our apologies for the tough timing on this meeting as Tom has limited time this week and we are not able to shift his other meetings which are almost entirely Administrator priorities.

From: Smith, Kelley on behalf of Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; LeDuc, Stephen; Fleming, Megan; Ridley, Caroline
CC: Kavlock, Robert; Kadeli, Lek
Sent: 3/27/2015 1:06:23 PM
Subject: HF Drinking Water Chapter Comments: Chapter 4

CT: Nathan Gentry

Notes: Discussion of comments for Chapter 4

From: Smith, Kelley on behalf of Burke, Thomas
To: Weaver, Jim; Gibbons, Dayna; LeDuc, Stephen; Zambrana, Jose; Burden, Susan; Smith, Kelley; Briskin, Jeanne; Matthews, Lisa; Frithsen, Jeff; Teichman, Kevin; Stanek, John; Ridley, Caroline
CC: Yost, Erin; Jonathan.Koplos **Ex. 4**; Burgoon, Lyle; Walsh, Debra; Vandenberg, John; MaryEllen.Tuccillo; **Ex. 4**; Fleming, Megan; Kavlock, Robert; Shari.Ring; **Ex. 4**; Kadeli, Lek
Sent: 3/27/2015 1:02:50 PM
Subject: HF Drinking Water Chapter Comments: Executive Summary & chapter 4 (Discussion part 2 - if needed)

CT: Nathan Gentry

Teleconference: **Ex. 6**

Staff:

Notes: Discussion of comments for Chapters 6-10 and executive summary

From: Smith, Kelley on behalf of Burke, Thomas
To: Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Yohannes, Lia; Knightes, Chris; Zambrana, Jose; Briskin, Jeanne; Teichman, Kevin
CC: Kadeli, Lek; Kavlock, Robert; Jonathan.Koplos; **Ex. 4**
Sent: 3/27/2015 12:57:28 PM
Subject: HF Drinking Water Chapter Comments: 1,2,3, and 5

CT: Nathan Gentry

Teleconference: Details TBD

Staff:

Notes: Discussion of comments for Chapters 1-3 and 5.

From: Smith, Kelley on behalf of Burke, Thomas
To: Burke, Thomas; Matthews, Lisa; Teichman, Kevin; Frithsen, Jeff; Smith, Kelley; Sonich-Mullin, Cynthia; Smith, Kelly
CC: Ludwig, Ralph; Wilkin, Rick; Beak, Doug; Lowrance, Richard; Zambrana, Jose; Briskin, Jeanne; Gibbons, Dayna
BCC: DCRoomRRB41213/ORD
Sent: 3/10/2015 10:54:22 AM
Subject: HF Paper Review with team

Would this time slot work for Tom and I to go over the following papers with the authors?

Kildeer, Wise, SWPA, RATON

AGENDA
Bi-weekly HF Status
10:00 – 10:45 pm
July 9, 2015

Non-Responsive

Next steps and path forward: HFDWA, ORD, 10 mins

Non-Responsive

From: Maddox, Donald on behalf of Bond, Brian
To: Ragland, Micah; Maddox, Donald; Marks, Teresa; Burke, Thomas; Gentry, Nathan; Hanley, Mary
CC: Fritz, Matthew; Kadeli, Lek
Sent: 6/2/2015 3:20:12 PM
Subject: Fracking Assessment Briefing

From: Matthews, Lisa
To: Card, Joan; Smith, Kelly; Marks, Teresa; Burke, Thomas; Sonich-Mullin, Cynthia; Smith, Kelley; Gibbons, Dayna; McGrath, Shaun; Wilkin, Rick; Sullivan, Kate
CC: Zambrana, Jose; Varcoe, Betsy; Orme-Zavaleta, Jennifer; Bueno, Michael; Perry, Dale; Frithsen, Jeff; Hanley, Mary; Lowrance, Richard; Jewett, David; Deener, Kathleen; Gillespie, Andrew
Sent: 5/21/2015 11:04:10 AM
Subject: Brief CO state officials on Raton case study and water availability report
Attachments:

Ex. 5**Ex. 6****Ex. 6**

Audio will be provided via a call-in line that our operator will manage to ensure only confirmed participants can connect.

Ex. 5

Expected participants:

Ex. 5

Thank you,
Lisa Matthews
US EPA Office of Research and Development
202-564-6669 office

Ex. 6

Briefing for Colorado State Agencies on
EPA's Retrospective Case Study in the Raton Basin, CO and
Water Acquisition Report

Ex. 6

Ex. 6

May 21, 2015
2:30-3:30 pm MDT

Purpose: Briefing on two EPA reports, *Retrospective Case Study in the Raton Basin, CO*, and *Case Study Analysis of the Impacts of Water Acquisition for Hydraulic Fracturing on Local Water Availability* (focus on Colorado River Basin). ***The information presented at this meeting and discussed is embargoed until publicly released.***

Draft Agenda

Ex. 5 —

From: Teichman, Kevin
To: Burke, Thomas
Sent: 5/7/2015 3:08:13 PM
Subject: Declined: HOLD: Possible last chance time for in person HF Retrospective or HF DW Study messaging or presentation Discussion time

From: Matthews, Lisa
To: Burke, Thomas
Sent: 5/7/2015 1:48:53 PM
Subject: Tentative: HOLD: Possible last chance time for in person HF Retrospective or HF DW Study messaging or presentation Discussion time

From: Briskin, Jeanne
To: Burke, Thomas
Sent: 5/7/2015 1:13:42 PM
Subject: Tentative: HOLD: Possible last chance time for in person HF Retrospective or HF DW Study messaging or presentation Discussion time

From: Matthews, Lisa
To: Burke, Thomas
Sent: 4/7/2015 11:50:10 AM
Subject: Tentative: HF Discussion: DW Chapter 9 and Tox and QSAR reports

Non-Responsive

From: Hanley, Mary
To: Burke, Thomas
Sent: 4/7/2015 11:37:18 AM
Subject: Declined: HF Report Discussion

From: Smith, Kelley on behalf of Burke, Thomas
To: Frithsen, Jeff; Smith, Kelley; Burke, Thomas; Teichman, Kevin; Hanley, Mary; Perry, Dale; Kavlock, Robert; Orme-Zavaleta, Jennifer
Sent: 4/7/2015 11:22:20 AM
Subject: HF Report Discussion

CT: Jeff Frithsen / Kelley Smith

Ex. 6

Staff:

Mary Hanley, AO
Dale Perry, AO
Tom Burke, ORD
Bob Kavlock, ORD
Jeff Frithsen, ORD
Kevin Teichman, ORD
Jennifer Orme-Zavaleta, ORD
Kelley Smith, ORD

Note: Part one of two meetings to discuss Water Acquisition and Source Apportionment (Part 1 should focus on priority items). Jeff Frithsen will send a second invite for later in the day to cover the rest.

Non-Responsive

From: Jonathan Koplos
To: Burke, Thomas
Sent: 3/31/2015 10:56:06 AM
Subject: Tentative: HF Drinking Water Chapter Comments: Executive Summary & chapter 4 (Discussion part 2 - if needed)



Follow us on social media:



From: Burgoon, Lyle
To: Burke, Thomas
Sent: 3/31/2015 10:49:14 AM
Subject: Tentative: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Microsoft Outlook on behalf of Frithsen, Jeff
To: Burke, Thomas
Sent: 3/31/2015 9:20:43 AM
Subject: Meeting Forward Notification: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

Your meeting was forwarded

Frithsen, Jeff has forwarded your meeting request to additional recipients.

Meeting

HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

Meeting Time

Tuesday, 31 March 2015 16:15-17:30.

Recipients

Jonathan.Koplos

Ex. 4

Shari.Ring

Ex. 4

MaryEllen.Tuccillo

Fleming, Megan

Ex. 4

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server 2013

From: Microsoft Outlook on behalf of Frithsen, Jeff
To: Burke, Thomas
Sent: 3/31/2015 9:20:10 AM
Subject: Meeting Forward Notification: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

Your meeting was forwarded

Frithsen, Jeff has forwarded your meeting request to additional recipients.

Meeting

HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

Meeting Time

Tuesday, 31 March 2015 12:00-14:30.

Recipients

Jonathan.Koplos Ex. 4

Shari.Ring Ex. 4

MaryEllen.Tuccillo

Ex. 4

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server 2013

From: Microsoft Outlook on behalf of Frithsen, Jeff
To: Burke, Thomas
Sent: 3/31/2015 9:19:42 AM
Subject: Meeting Forward Notification: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

Your meeting was forwarded

Frithsen, Jeff has forwarded your meeting request to additional recipients.

Meeting

HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

Meeting Time

Tuesday, 31 March 2015 12:00-14:30.

Recipients

Knightes, Chris

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server 2013

From: Microsoft Outlook on behalf of Frithsen, Jeff
To: Burke, Thomas
Sent: 3/31/2015 9:18:59 AM
Subject: Meeting Forward Notification: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

Your meeting was forwarded

Frithsen, Jeff has forwarded your meeting request to additional recipients.

Meeting

HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

Meeting Time

Tuesday, 31 March 2015 12:00-14:30.

Recipients

Fleming, Megan

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server 2013

From: Teichman, Kevin
To: Burke, Thomas
Sent: 3/30/2015 12:32:24 PM
Subject: Declined: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Microsoft Outlook on behalf of Stanek, John
To: Burke, Thomas
Sent: 3/30/2015 11:47:43 AM
Subject: Meeting Forward Notification: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

Your meeting was forwarded

Stanek, John has forwarded your meeting request to additional recipients.

Meeting

HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

Meeting Time

Tuesday, 31 March 2015 16:15-17:30.

Recipients

Vandenberg, John

Walsh, Debra

Yost, Erin

Burgoon, Lyle

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server 2013

From: Microsoft Outlook on behalf of Stanek, John
To: Burke, Thomas
Sent: 3/30/2015 11:46:35 AM
Subject: Meeting Forward Notification: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

Your meeting was forwarded

Stanek, John has forwarded your meeting request to additional recipients.

Meeting

HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

Meeting Time

Tuesday, 31 March 2015 12:00-14:30.

Recipients

Vandenberg, John

Walsh, Debra

Burgoon, Lyle

Yost, Erin

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server 2013

From: Teichman, Kevin
To: Burke, Thomas
Sent: 3/28/2015 12:20:47 PM
Subject: Declined: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Microsoft Outlook on behalf of Frithsen, Jeff
To: Burke, Thomas
Sent: 3/27/2015 2:35:30 PM
Subject: Meeting Forward Notification: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

Your meeting was forwarded

Frithsen, Jeff has forwarded your meeting request to additional recipients.

Meeting

HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

Meeting Time

Tuesday, 31 March 2015 16:15-17:30.

Recipients

Jonathan.Koplos Ex. 4

Shari.Ring Ex. 4

MaryEllen.Tuccillo

x. 4

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server 2013

From: Microsoft Outlook on behalf of Frithsen, Jeff
To: Burke, Thomas
Sent: 3/27/2015 2:34:46 PM
Subject: Meeting Forward Notification: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

Your meeting was forwarded

Frithsen, Jeff has forwarded your meeting request to additional recipients.

Meeting

HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

Meeting Time

Tuesday, 31 March 2015 12:00-14:30.

Recipients

Jonathan.Koplos Ex. 4

Shari.Ring Ex. 4

MaryEllen.Tuccillo

Ex. 4

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server 2013

From: Microsoft Outlook on behalf of Frithsen, Jeff
To: Burke, Thomas
Sent: 3/27/2015 2:33:38 PM
Subject: Meeting Forward Notification: HF Drinking Water Chapter Comments: 1,2,3, and 5

Your meeting was forwarded

Frithsen, Jeff has forwarded your meeting request to additional recipients.

Meeting

HF Drinking Water Chapter Comments: 1,2,3, and 5

Meeting Time

Monday, 30 March 2015 16:00-17:30.

Recipients

Jonathan.Koplos **Ex. 4**

All times listed are in the following time zone: (UTC-05:00) Eastern Time (US & Canada)

Sent by Microsoft Exchange Server 2013

From: Burden, Susan
To: Burke, Thomas
Sent: 3/27/2015 1:41:43 PM
Subject: Tentative: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Burden, Susan
To: Burke, Thomas
Sent: 3/27/2015 1:41:39 PM
Subject: Tentative: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Teichman, Kevin
To: Burke, Thomas
Sent: 3/27/2015 1:19:14 PM
Subject: Declined: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Zambrana, Jose
To: Burke, Thomas
Sent: 5/7/2015 1:15:13 PM
Subject: Accepted: HOLD: Possible last chance time for in person HF Retrospective or HF DW Study messaging or presentation Discussion time

From: Blackburn, Elizabeth
To: Burke, Thomas
Sent: 5/7/2015 1:09:15 PM
Subject: Accepted: HF Retrospective State Presentation and Messaging discussion

From: Blackburn, Elizabeth
To: Burke, Thomas
Sent: 5/7/2015 1:09:07 PM
Subject: Accepted: HOLD: Possible last chance time for in person HF Retrospective or HF DW Study messaging or presentation Discussion time

From: Smith, Kelly
To: Burke, Thomas
Sent: 5/7/2015 12:57:00 PM
Subject: Accepted: HOLD: Possible last chance time for in person HF Retrospective or HF DW Study messaging or presentation Discussion time

From: Frithsen, Jeff
To: Burke, Thomas
Sent: 5/7/2015 12:56:00 PM
Subject: Accepted: HOLD: Possible last chance time for in person HF Retrospective or HF DW Study messaging or presentation Discussion time

From: Smith, Kelley
To: Burke, Thomas
Sent: 5/7/2015 12:52:01 PM
Subject: Accepted: HOLD: Possible last chance time for in person HF Retrospective or HF DW Study messaging or presentation Discussion time

From: Smith, Kelley
To: Burke, Thomas
Sent: 5/7/2015 12:47:47 PM
Subject: Accepted: HF Retrospective State Presentation and Messaging discussion

From: Smith, Kelly
To: Burke, Thomas
Sent: 5/7/2015 7:27:53 AM
Subject: Accepted: HF Retrospective and HF DW Assessment State Presentation discussion

From: Smith, Kelley
To: Burke, Thomas
Sent: 5/6/2015 6:30:21 PM
Subject: Accepted: HF Retrospective and HF DW Assessment State Presentation discussion

From: Smith, Kelley on behalf of Kavlock, Robert
To: Burke, Thomas
Sent: 4/7/2015 12:51:12 PM
Subject: Accepted: HF Discussion: DW Chapter 9 and Tox and QSAR reports

From: Hanley, Mary
To: Burke, Thomas
Sent: 4/7/2015 12:49:25 PM
Subject: Accepted: HF Report Discussion

From: Yost, Erin
To: Burke, Thomas
Sent: 4/7/2015 12:47:33 PM
Subject: Accepted: HF Discussion: DW Chapter 9 and Tox and QSAR reports

From: Vandenberg, John
To: Burke, Thomas
Sent: 4/7/2015 12:36:25 PM
Subject: Accepted: HF Discussion: DW Chapter 9 and Tox and QSAR reports

From: Briskin, Jeanne
To: Burke, Thomas
Sent: 4/7/2015 12:29:16 PM
Subject: Accepted: HF Discussion: DW Chapter 9 and Tox and QSAR reports

From: Smith, Kelley
To: Burke, Thomas
Sent: 4/7/2015 12:23:53 PM
Subject: Accepted: HF Report Discussion

From: Frithsen, Jeff
To: Burke, Thomas
Sent: 4/7/2015 11:53:54 AM
Subject: Accepted: HF Discussion: DW Chapter 9 and Tox and QSAR reports

From: Frithsen, Jeff
To: Burke, Thomas
Sent: 4/7/2015 11:54:03 AM
Subject: Accepted: HF Report Discussion

From: Orme-Zavaleta, Jennifer
To: Burke, Thomas
Sent: 4/7/2015 11:34:06 AM
Subject: Accepted: HF Report Discussion

From: Smith, Kelley
To: Burke, Thomas
Sent: 4/7/2015 11:26:18 AM
Subject: Accepted: HF Discussion: DW Chapter 9 and Tox and QSAR reports

From: Smith, Kelley
To: Burke, Thomas
Sent: 4/7/2015 11:22:21 AM
Subject: Accepted: HF Report Discussion

From: Zambrana, Jose
To: Burke, Thomas
Sent: 3/31/2015 11:45:56 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapter 4 (Discussion part 2
- if needed)

From: Zambrana, Jose
To: Burke, Thomas
Sent: 3/31/2015 11:45:49 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6 & 9 (Discussion part 1)

From: Mary Ellen Tuccillo
To: Burke, Thomas
Sent: 3/31/2015 11:10:11 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapter 4 (Discussion part 2 - if needed)



Follow us on social media:



From: Mary Ellen Tuccillo
To: Burke, Thomas
Sent: 3/31/2015 11:09:27 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6 & 9 (Discussion part 1)



Follow us on social media:



From: Jonathan Koplos
To: Burke, Thomas
Sent: 3/31/2015 10:55:26 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6 & 9 (Discussion part 1)



Follow us on social media:



From: Smith, Kelley
To: Burke, Thomas
Sent: 3/31/2015 10:51:20 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapter 4 (Discussion part 2
- if needed)

From: Smith, Kelley
To: Burke, Thomas
Sent: 3/31/2015 10:51:13 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6 & 9 (Discussion part 1)

From: LeDuc, Stephen
To: Burke, Thomas
Sent: 3/31/2015 10:50:52 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: LeDuc, Stephen
To: Burke, Thomas
Sent: 3/31/2015 10:50:43 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Ridley, Caroline
To: Burke, Thomas
Sent: 3/31/2015 10:50:26 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Burgoon, Lyle
To: Burke, Thomas
Sent: 3/31/2015 10:49:01 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Frithsen, Jeff
To: Burke, Thomas
Sent: 3/31/2015 10:48:42 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Frithsen, Jeff
To: Burke, Thomas
Sent: 3/31/2015 10:48:36 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Ridley, Caroline
To: Burke, Thomas
Sent: 3/31/2015 10:47:58 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Fleming, Megan
To: Burke, Thomas
Sent: 3/31/2015 10:47:58 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Fleming, Megan
To: Burke, Thomas
Sent: 3/31/2015 10:47:44 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Smith, Kelley
To: Burke, Thomas
Sent: 3/31/2015 10:47:30 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Smith, Kelley
To: Burke, Thomas
Sent: 3/31/2015 10:47:02 AM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Fleming, Megan
To: Burke, Thomas
Sent: 3/31/2015 9:43:07 AM
Subject: Accepted: FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10
(Discussion part 1)

From: Fleming, Megan
To: Burke, Thomas
Sent: 3/31/2015 9:43:04 AM
Subject: Accepted: FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10
(Discussion part 2 - if needed)

From: Jonathan Koplos
To: Burke, Thomas
Sent: 3/31/2015 9:22:18 AM
Subject: Accepted: FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)



Follow us on social media:



From: Jonathan Koplos
To: Burke, Thomas
Sent: 3/30/2015 9:49:00 AM
Subject: Accepted: HF Drinking Water Chapter Comments: 1,2,3, and 5

The logo for CADMUS, featuring the word "CADMUS" in white, uppercase, sans-serif font centered within a dark gray rectangular background.

Follow us on social media:



From: Knightes, Chris
To: Burke, Thomas
Sent: 3/29/2015 11:23:00 AM
Subject: Accepted: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Jonathan Koplos
To: Burke, Thomas
Sent: 3/27/2015 3:06:40 PM
Subject: Accepted: FW: HF Drinking Water Chapter Comments: 1,2,3, and 5

The logo for CADMUS, featuring the word "CADMUS" in white, uppercase, sans-serif font centered within a dark gray rectangular background.

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From: Jonathan Koplos
To: Burke, Thomas
Sent: 3/27/2015 3:06:30 PM
Subject: Accepted: FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10
(Discussion part 2 - if needed)



Follow us on social media:



From: Jonathan Koplos
To: Burke, Thomas
Sent: 3/27/2015 3:06:12 PM
Subject: Accepted: FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)



Follow us on social media:



From: Jonathan Koplos
To: Burke, Thomas
Sent: 3/27/2015 3:05:51 PM
Subject: Accepted: FW: HF Drinking Water Chapter Comments: 1,2,3, and 5

Thank you, Tom.

Ex. 5

Jonathan



Follow us on social media:



From: LeDuc, Stephen
To: Burke, Thomas
Sent: 3/27/2015 2:57:10 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: LeDuc, Stephen
To: Burke, Thomas
Sent: 3/27/2015 2:56:32 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Chapter 4

From: Shari Ring
To: Burke, Thomas
Sent: 3/27/2015 2:52:18 PM
Subject: Accepted: FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)



Follow us on social media:



From: Shari Ring
To: Burke, Thomas
Sent: 3/27/2015 2:52:09 PM
Subject: Accepted: FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10
(Discussion part 2 - if needed)



Follow us on social media:



From: Mary Ellen Tuccillo
To: Burke, Thomas
Sent: 3/27/2015 2:36:46 PM
Subject: Accepted: FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10
(Discussion part 2 - if needed)



Follow us on social media:



From: Mary Ellen Tuccillo
To: Burke, Thomas
Sent: 3/27/2015 2:36:40 PM
Subject: Accepted: FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10
(Discussion part 1)



Follow us on social media:



From: Frithsen, Jeff
To: Burke, Thomas
Sent: 3/27/2015 2:36:10 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Chapter 4

From: Frithsen, Jeff
To: Burke, Thomas
Sent: 3/27/2015 2:34:57 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Frithsen, Jeff
To: Burke, Thomas
Sent: 3/27/2015 2:34:06 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Frithsen, Jeff
To: Burke, Thomas
Sent: 3/27/2015 2:32:45 PM
Subject: Accepted: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Zambrana, Jose
To: Burke, Thomas
Sent: 3/27/2015 2:17:24 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Zambrana, Jose
To: Burke, Thomas
Sent: 3/27/2015 2:15:24 PM
Subject: Accepted: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Zambrana, Jose
To: Burke, Thomas
Sent: 3/27/2015 2:14:27 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Chapter 4

From: Zambrana, Jose
To: Burke, Thomas
Sent: 3/27/2015 2:13:02 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Ridley, Caroline
To: Burke, Thomas
Sent: 3/27/2015 1:52:38 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: LeDuc, Stephen
To: Burke, Thomas
Sent: 3/27/2015 1:42:46 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Yohannes, Lia
To: Burke, Thomas
Sent: 3/27/2015 1:36:54 PM
Subject: Accepted: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Frithsen, Jeff
To: Burke, Thomas
Sent: 3/27/2015 1:36:41 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Frithsen, Jeff
To: Burke, Thomas
Sent: 3/27/2015 1:36:32 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Chapter 4

From: Frithsen, Jeff
To: Burke, Thomas
Sent: 3/27/2015 1:36:10 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Frithsen, Jeff
To: Burke, Thomas
Sent: 3/27/2015 1:35:15 PM
Subject: Accepted: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Matthews, Lisa
To: Burke, Thomas
Sent: 3/27/2015 1:18:16 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Teichman, Kevin
To: Burke, Thomas
Sent: 3/27/2015 1:18:05 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Chapter 4

From: Teichman, Kevin
To: Burke, Thomas
Sent: 3/27/2015 1:18:03 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Teichman, Kevin
To: Burke, Thomas
Sent: 3/27/2015 1:18:04 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Teichman, Kevin
To: Burke, Thomas
Sent: 3/27/2015 1:18:01 PM
Subject: Accepted: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Ridley, Caroline
To: Burke, Thomas
Sent: 3/27/2015 1:14:51 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Chapter 4

From: Ridley, Caroline
To: Burke, Thomas
Sent: 3/27/2015 1:14:39 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Ridley, Caroline
To: Burke, Thomas
Sent: 3/27/2015 1:14:21 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Ridley, Caroline
To: Burke, Thomas
Sent: 3/27/2015 1:14:09 PM
Subject: Accepted: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Matthews, Lisa
To: Burke, Thomas
Sent: 3/27/2015 1:07:08 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Chapter 4

From: Smith, Kelley
To: Burke, Thomas
Sent: 3/27/2015 1:06:27 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Chapter 4

From: Matthews, Lisa
To: Burke, Thomas
Sent: 3/27/2015 1:03:32 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Matthews, Lisa
To: Burke, Thomas
Sent: 3/27/2015 1:03:13 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: Smith, Kelley
To: Burke, Thomas
Sent: 3/27/2015 1:02:55 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

From: Smith, Kelley
To: Burke, Thomas
Sent: 3/27/2015 1:02:10 PM
Subject: Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

From: LeDuc, Stephen
To: Burke, Thomas
Sent: 3/27/2015 12:58:37 PM
Subject: Accepted: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Matthews, Lisa
To: Burke, Thomas
Sent: 3/27/2015 12:58:34 PM
Subject: Accepted: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Smith, Kelley
To: Burke, Thomas
Sent: 3/27/2015 12:57:33 PM
Subject: Accepted: HF Drinking Water Chapter Comments: 1,2,3, and 5

From: Matthews, Lisa
To: Matthews, Lisa; Burke, Thomas; Frithsen, Jeff
CC: Smith, Kelley
Sent: 6/11/2015 2:41:40 PM
Subject: Briefing for National Tribal Caucus on Draft HFDWA

Ex. 6

POC:
Lisa Matthews
202-564-6669 office

Ex. 6

From: Ridley, Caroline
To: Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;
Jonathan.Koplos; Ex. 4; Fleming, Megan; Knightes, Chris;
Shari.Ring; Ex. 4; Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo; Ex. 4
Stanek, John; Solomon, Sarah; Yost, Erin
Sent: 6/10/2015 3:54:48 PM
Subject: HFDWA chapter leads meeting
Attachments: Untitled.msg; Untitled1.msg; Untitled2.msg

New invite for the summer

From:

To: Ridley, Caroline; Jonathan.Koplos; Ex. 4; Solomon, Sarah; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen; Fleming, Megan; Knightes, Chris; Shari.Ring; Ex. 4; Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo; Ex. 4; Stanek, John; Yost, Erin

Sent:**Subject:**

Agenda

Additional research topics

Word versions of individual chapters

Meeting schedule for the rest of summer

~~~~~  
New invite for the summer

---

**From:**

**To:**

Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;  
Jonathan.Koplos [Ex. 4] Fleming, Megan; Knightes, Chris;  
Shari.Ring [Ex. 4]; Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo [Ex. 4]  
Stanek, John; Solomon, Sarah; Yost, Erin

**Sent:**

**Subject:**

Short call this week. We will talk about the SAB charge questions that Jeff sent out on Tuesday.

~~~~~  
New invite for the summer

From:

To:

Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;

Jonathan.Koplos **Ex. 4** Fleming, Megan; Knightes, Chris;

Shari.Ring **Ex. 4** Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo **Ex. 4**

Stanek, John; Solomon, Sarah; Yost, Erin

Sent:

Subject:

Ex. 5

~~~~~  
New invite for the summer

---

**From:** LeDuc, Stephen  
**To:** LeDuc, Stephen; ORD-NCEA  
**Sent:** 6/9/2015 3:41:50 PM  
**Subject:** NCEA Presentation on Draft Hydraulic Fracturing Assessment  
**Attachments:** HFDWA Release Briefing 20150616.pdf

For those interested,

Caroline Ridley and I are providing an overview presentation on the Draft Hydraulic Fracturing Drinking Water Assessment. We released this assessment on June 4<sup>th</sup> and it covers the potential impacts of hydraulic fracturing activities on drinking water resources. This was a cross-ORD effort, with NCEA authors playing a prominent role. The presentation will last ca. 30-40 minutes with time for Q&A afterwards. Slides and call-in information are below.

Best,

Steve

**\*\*We would like to keep this presentation to NCEA personnel so please do not forward on this invite without permission\*\***

**Ex. 6**





# **Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources**

Presentation by the  
U.S. Environmental Protection Agency  
Office of Research and Development

16 June 2015

# HF Study Background



- In FY2010, Congress urged EPA to study the relationship between hydraulic fracturing and drinking water.
- EPA launched this study with the purpose to:
  - Assess whether hydraulic fracturing can impact drinking water resources
  - Identify driving factors that affect the severity and frequency of any impacts
- EPA's HF study was outlined in a 2011 *Study Plan* with additional details provided in a 2012 *Progress Report*.

# HF Study Progress



- EPA's HF study has produced:
  - 12 EPA technical reports – including 9 reports released along with the assessment
  - 4 EPA authored journal publications
  - 9 journal publications from colleagues at Lawrence Berkeley National Laboratory
  - Draft Hydraulic Fracturing Drinking Water Assessment report
- All completed products available online:
  - [www.epa.gov/hfstudy](http://www.epa.gov/hfstudy)

# Final HF Technical Reports Released This Month



- Study of water acquisition in the Susquehanna and Upper Colorado river basins.
- Study of sources of selected HF-related chemicals in the Allegheny river and streams in PA.
- Studies of possible impacts to drinking water resources (five retrospective case studies):
  - Northeast, PA (Bradford County)
  - Southwest, PA (Washington County)
  - Killdeer, ND
  - Raton Basin, CO
  - Wise County, TX
- Description of well construction and design characteristics.
- Characterization of spills related to HF operations.

# Draft HF Assessment Report



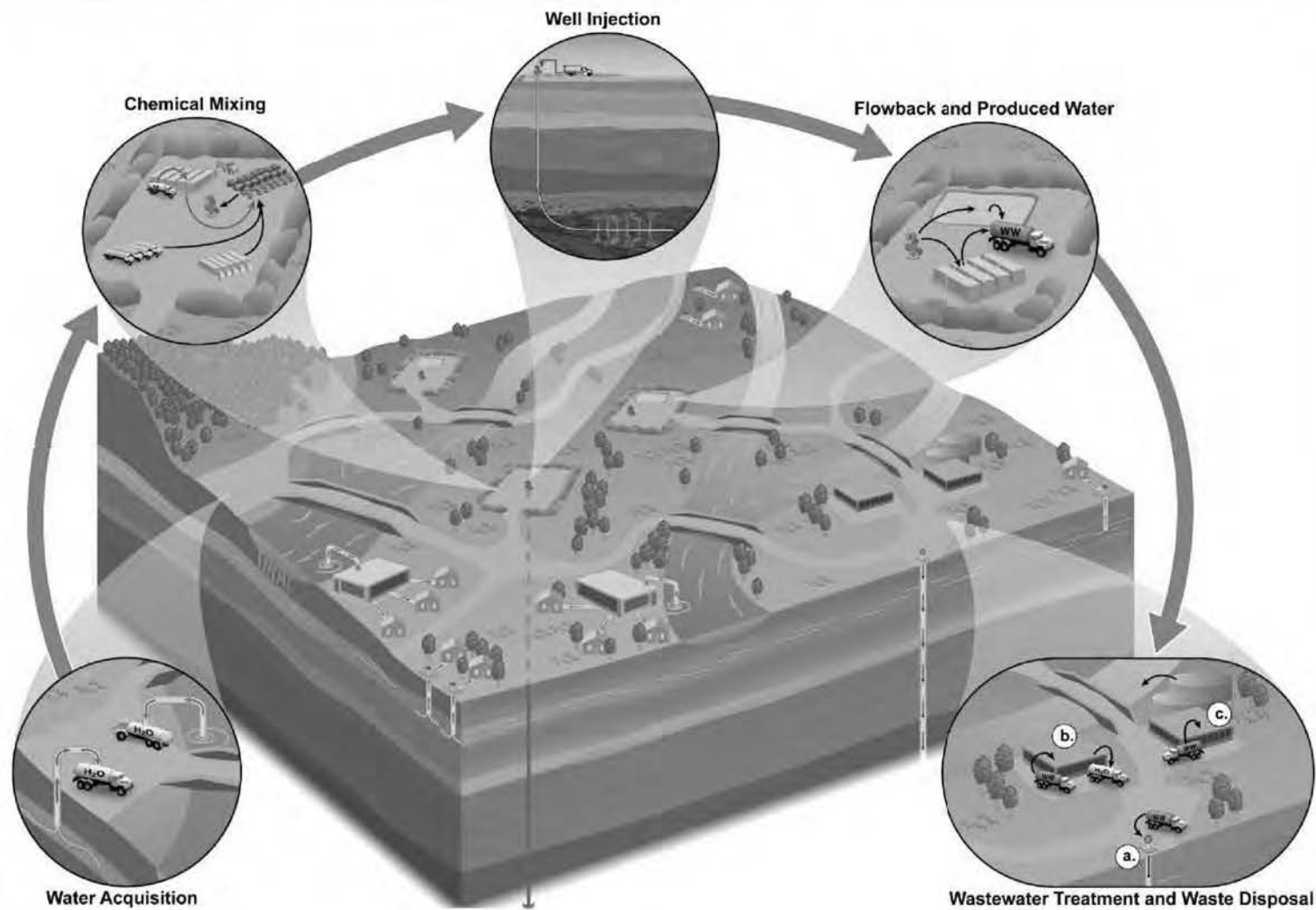
## What it is:

- A state-of-the-science integration and synthesis of information
- Based upon EPA research results, a robust literature review, and other information, including input from stakeholders.
- Identifies potential vulnerabilities and addresses questions identified in the *Study Plan* and *Progress Report*

## What it is not:

- Not a human health, exposure, or risk assessment
- Not site specific
- Does not identify or evaluate best management practices
- Not designed to inform specific policy decisions
- Does not identify or evaluate policy options

# Hydraulic Fracturing Water Cycle: Follow the water





# Summary of Impacts on Drinking Water Resources



- Assessment identified potential vulnerabilities to drinking water resources due to hydraulic fracturing activities.
- These vulnerabilities include:
  - Water withdrawals in areas with low water availability
  - Spills of HF fluids and flowback/produced water
  - HF conducted directly into formations containing drinking water resources
  - Well integrity failures
  - Subsurface migration of gases and liquids
  - Inadequately treated wastewater
- Despite vulnerabilities, there is no evidence of widespread, systemic impacts on drinking water resources due to hydraulic fracturing activities.

# Water Acquisition: Sources and volume



- Sources of water used for HF include surface water, ground water, and reused wastewaters.
- Cumulative water use is at least 44 BG/year; Median water use for a well is approximately 1.5 MG.
- There is much variability and water use varies between <1 MG to >5 MG per well.
- Factors affecting water use include:
  - length of well (well volume)
  - formation depth and geology
  - fracturing fluid formulation

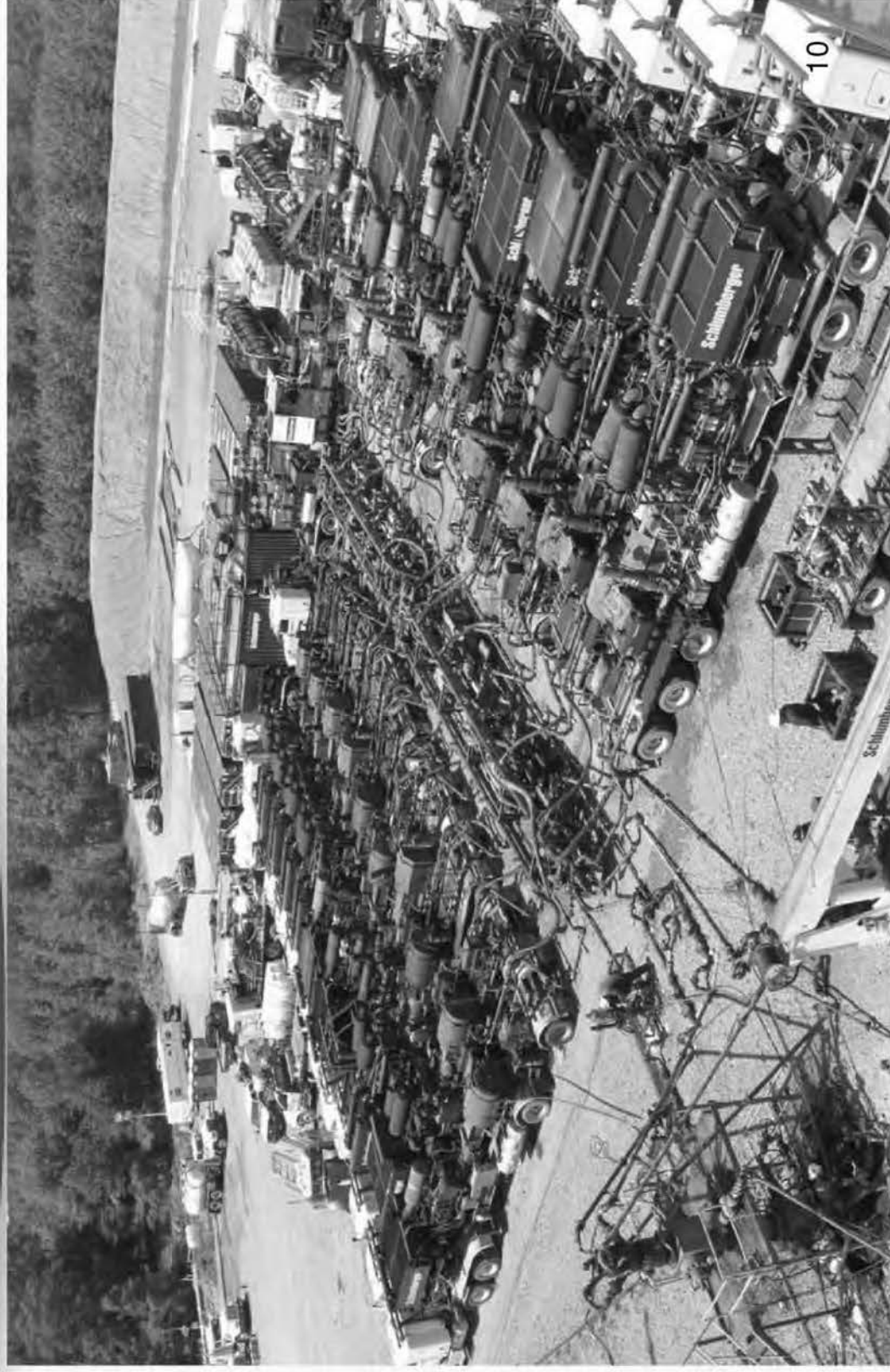


# Water Acquisition: Comparison to other uses



- HF water use is small compared with total water use and consumption at the national and state spatial scales.
- For most counties, HF activities account for <1% of total water use and consumption.
- Potential for impacts on drinking water resources greatest in areas with:
  - High HF water use
  - Low water availability
  - Frequent drought
  - Declining water sources
- Example area experiencing all four factors: southern and western Texas.

# Chemical Mixing



# Chemical Mixing: HF Fluids



- HF fluids generally consist of:
  - Base fluid
  - Chemical additives
  - Proppants
- Base fluids:
  - Largest constituent by volume
  - Most often water
  - Other base fluids include: non-aqueous fluids, acids, energized fluids, foams and emulsions
- Proppants:
  - Most often sands, resin-coated sands, other specialty engineered particles



# Chemical Mixing: HF Chemical Additives

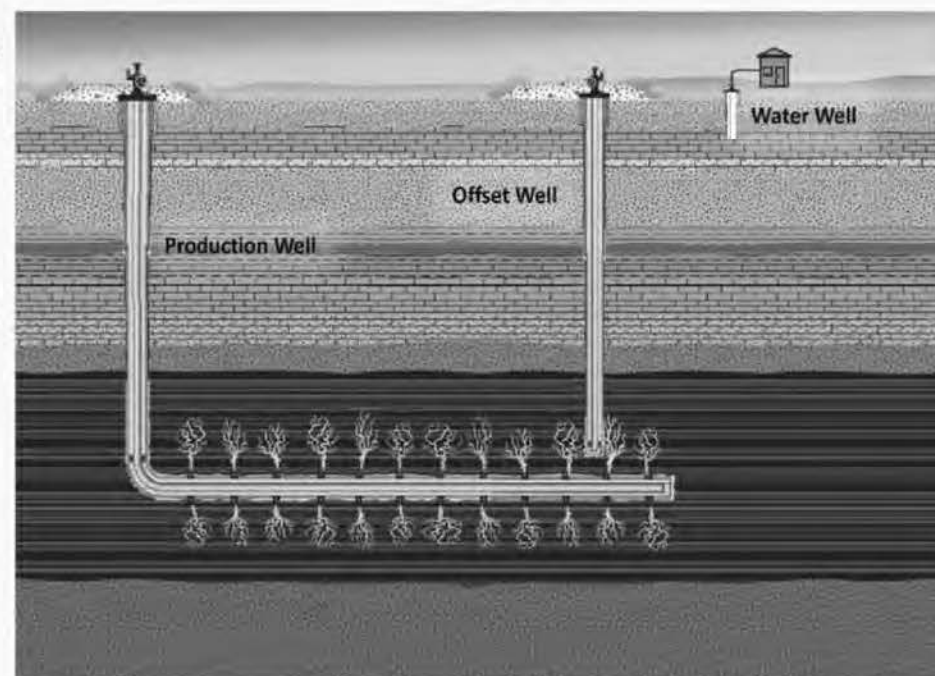


- Chemical additives:
  - Perform multiple functions
  - Can be a single chemical or a mixture of multiple chemicals
  - Are injected during different stages of the HF process
  - Generally comprise <2% of injected fluid volumes
  - Thousands of gallons are potentially stored on-site and used in the HF process
- We identified more than 1000 chemicals used as components of HF fluids:
  - Median of 14 unique chemicals used per well
  - No single chemical used at all well sites across country
  - Chemicals used at >65% of well sites include: methanol, hydrotreated light petroleum distillates, hydrochloric acid

# Well Injection: Potential subsurface pathways



- Movement of gas or liquids from the wellbore into a drinking water resource
- Movement of gas or liquids from production zone through subsurface rock formations into a drinking water resource





# Well Construction and Integrity



- Multiple barriers act together to prevent migration of gases and liquids.
- Inadequate construction, defects and degradation of casings or cement, or absence of redundancies can create pathways leading to contamination of drinking water resources.
- EPA's Well File Review Report:
  - Estimated 66% of wells had one or more uncemented intervals
  - Estimated 3% of wells did not have cement across a portion of the operator defined drinking water zone
- Specific rate of well failures unknown but generally increases over time.

# Sub-Surface Movement



- Physical separation between the production zone and drinking water resources can minimize impacts.
- In some cases, the production zone is co-located with drinking water resources:
  - Estimated 0.4% of wells fractured in 2009 and 2010 showed evidence of fracturing directly within a drinking water resource
  - Use of the drinking water resource not well characterized
- Deep HF operations are unlikely to create direct flow paths from fracture production zones to shallow drinking water resources.
- Well-to-well communications provide documented and potential pathways for fluid movement into drinking water resources.

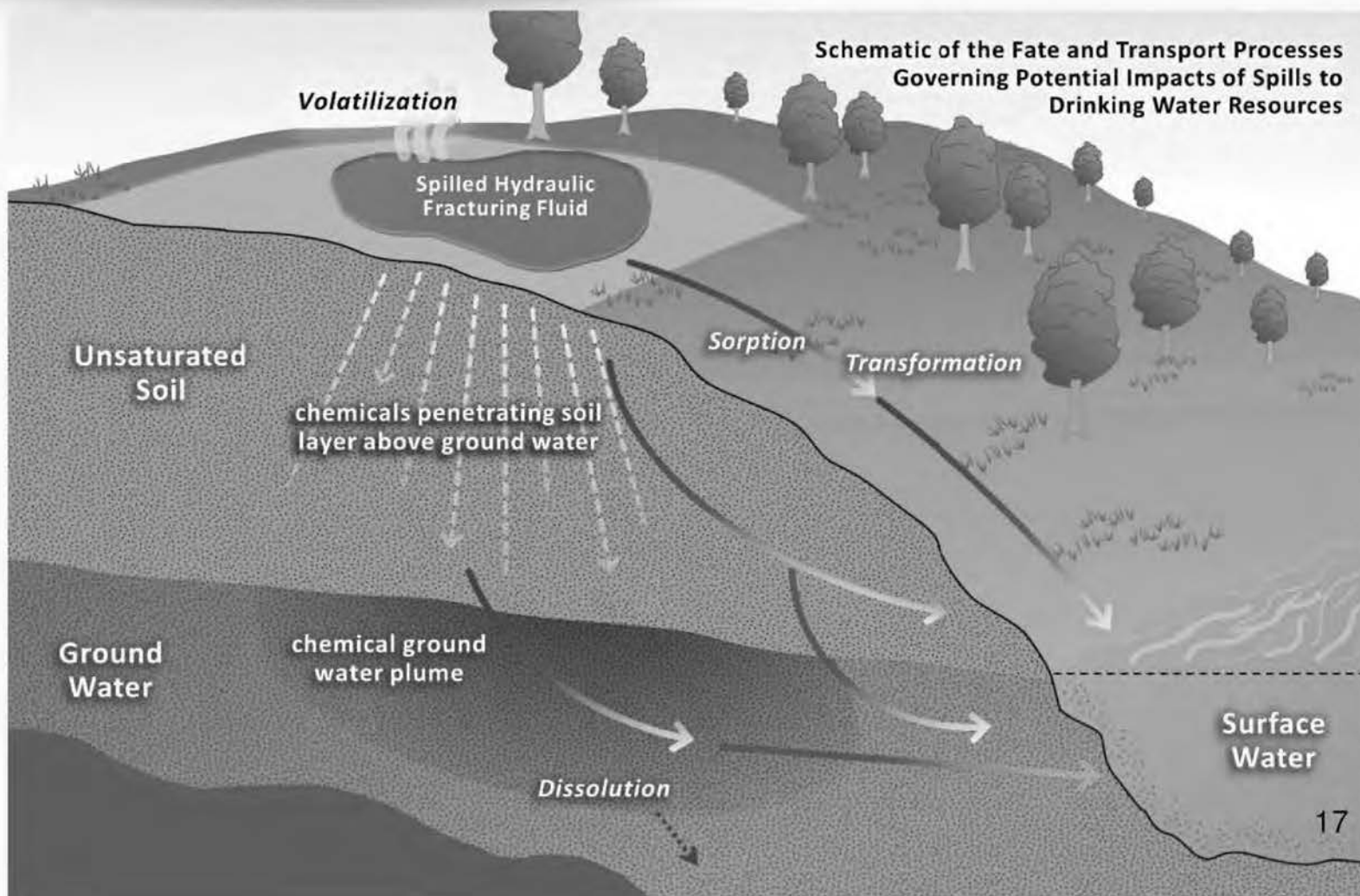
# Flowback and Produced Water



- Flowback and produced water come out of the well when pressure is released.
- Amount of fracturing fluid returned to surface is generally 10% to 25% of injected fluid and varies widely.
- Data on produced water composition limited:
  - 134 chemical detected specifically in FB/PW
  - High total dissolved solids
  - Metals, organics
  - Naturally occurring radionuclides
- High TDS present analytical challenges for characterizing chemical composition



# Chemical Mixing: Spills



# Spills of HF Fluids and Produced Waters



- Spills of HF fluids and produced waters have occurred; when spills occur, they can and have reached drinking water resources through multiple pathways.
- Total number and frequency of spills due to HF activities unknown.
- Based upon spill data reviewed:
  - Hundreds of spills of hydraulic fracturing fluids and produced waters have occurred
  - Spill volumes varied greatly: 2 gallons to 1.3 Million gallons
  - Most common causes of spills were equipment failure and human error
  - Of those spills reviewed, 8% of documented spills reached a surface or ground water resource; 64% reached soils

# Hydraulic Fracturing Wastewater



- HF produces large volumes of wastewater.
- Most HF wastewater is disposed of using underground injection control (UIC) wells.
- UIC disposal varies geographically:
  - 95% UIC in Barnett Shale area (TX)
  - 10% UIC in Marcellus Shale area (PA)
- Wastewater reuse varies geographically:
  - 5% wastewater use in Barnett Shale area
  - 70% wastewater reuse in Marcellus Shale area
- Other disposal options for HF wastewater:
  - Centralized wastewater treatment facilities (CWT)
  - Evaporation pits, land irrigation and road spreading

# HF Chemical Characterization



- 1,173 chemicals reportedly used in HF fluids or detected in FB/PW.
- 147 have human oral toxicity reference values.
- Absence of toxicity reference values limits ability to conduct future site specific exposure/risk assessments.
- CBI limits complete characterization of chemical use in HF operations:
  - From EPA's analysis of the FracFocus 1.0 database
  - One or more ingredients were claimed as confidential in more than 70% of disclosures
  - Operators designated 11% of all ingredient records as confidential business information

# Conclusions



- Assessment identified potential vulnerabilities to drinking water resources due to hydraulic fracturing activities.
- The number of documented impacts to drinking water resources is small relative to the number of fractured wells.
- Despite vulnerabilities, there is no evidence of widespread, systemic impacts on drinking water resources due to hydraulic fracturing activities.



# Use of Assessment



- EPA's assessment represents a synthesis of the science and contributes to overall understanding of potential impacts.
- The assessment helps to advance the science and understanding of hydraulic fracturing by identifying potential vulnerabilities.
- The assessment can inform future decisions by industry and by federal, tribal, state, and local entities concerning how best to protect drinking water resources now and in the future.

# What's Next



- Science Advisory Board (SAB) review of draft assessment:
  - Public, open process
  - Opportunity to comment on charge questions
  - Opportunity to address SAB panel concerning EPA's draft assessment
  - Opportunity to provide comments on the draft assessment
- Agency will use comments from public and SAB to revise draft assessment and release as final.

**From:** Matthews, Lisa  
**To:** Matthews, Lisa; Frithsen, Jeff; Gibbons, Dayna  
**CC:** Sonich-Mullin, Cynthia; Zambrana, Jose; Bueno, Michael; Briskin, Jeanne; Kavlock, Robert; Orme-Zavaleta, Jennifer  
**Sent:** 6/2/2015 9:29:37 AM  
**Subject:** Briefing for Technical Roundtable on Draft HFDWA

## Draft Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources

Greetings Roundtable participants,

Today, the EPA released its *Draft Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources* for public comment and peer review, along with nine final peer-reviewed EPA technical reports completed as part of the study. The draft assessment provides the most complete compilation of scientific data to date on the potential impacts to drinking water resources from hydraulic fracturing activities. The draft assessment integrates a broad literature review, with results from EPA-led research projects and input from stakeholders through outreach efforts.

Learn more about the Scientific Advisory Board's (SAB) peer review process for the draft assessment.

The EPA will be hosting a special webinar for our Technical Roundtable participants on **Wednesday, June 10, 2015 from 3:00 to 4:00 pm EDT** to provide a brief overview of the draft assessment, the key findings, and the review process.

# Ex. 6

Thank you for your interest in the EPA's Study of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources.

Regards,  
Lisa Matthews  
US EPA Office of Research and Development  
202-564-6669 office

**Ex. 6**

[matthews.lisa@epa.gov](mailto:matthews.lisa@epa.gov)



---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Mary Hanley (Hanley.Mary@epa.gov); Gibbons, Dayna; Allen, Laura  
**CC:** Marks, Teresa  
**Sent:** 5/28/2015 6:24:44 AM  
**Subject:** HFDWA: Last comments on revised executive summary  
**Attachments:** HFDWA - Executive Summary\_20150527\_430pm.pdf

I'm trying to schedule time early this morning to get last comments on the revised executive summary. I'm hoping this might work for folks.

The latest version of the executive summary was sent out late yesterday afternoon and is also attached below.

Jeff

---

**From:** Meacham, Connie  
**To:** Meacham, Connie; Ridley, Caroline; Frithsen, Jeff; Walsh, Debra  
**Sent:** 5/27/2015 10:19:33 AM  
**Subject:** Preparing the SAB Copy of HF Report & Appendices - - & Plan of action for next week's Final Report & Final Appendices

Hi Caroline & Jeff - (Debra - you are optional on this call) -

Let's talk about the timing for:

Preparing the SAB Copy of HF Report & Appendices - - to send to SAB on Friday (May 29<sup>th</sup>)

& Plan of action for next week's Final Report & Final Appendices (to Post June 4<sup>th</sup>).

---

**From:** Meacham, Connie  
**To:** Meacham, Connie; Ridley, Caroline; Johnson, Maureen; Frithsen, Jeff  
**Sent:** 5/26/2015 12:24:54 PM  
**Subject:** Phone call about the Hydraulic Fracturing Report ... Next Steps for Maureen's contractors

**Ex. 6**

Caroline wrote:

**Ex. 5**

**Non-Responsive**

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Burden, Susan; LeDuc, Stephen; Ridley, Caroline  
**Sent:** 5/26/2015 8:00:02 AM  
**Subject:** HFDWA: Status Check in

---

**From:** Burke, Thomas  
**To:** Burke, Thomas; Frithsen, Jeff; Briskin, Jeanne; Burden, Susan; LeDuc, Stephen; Ridley, Caroline; Hauchman, Fred  
**Sent:** 5/20/2015 11:33:29 AM  
**Subject:** Status of Assessment

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Mary Hanley (Hanley.Mary@epa.gov); Perry, Dale; Kavlock, Robert  
**Sent:** 5/20/2015 6:41:12 AM  
**Subject:** HFDWA: Continued discussions

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Ridley, Caroline; Auerbacher, Kevin; Weaver, Jim; Mary Ellen Tuccillo; Howard, MarkW  
**Sent:** 5/19/2015 9:36:26 AM  
**Subject:** HFDWA: Comments on definitions

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Mary Hanley (Hanley.Mary@epa.gov); Perry, Dale; Kavlock, Robert  
**Sent:** 5/18/2015 2:49:15 PM  
**Subject:** HFDWA: Comments continued



---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; tom Brennan (Brennan.Thomas@epa.gov); Hanlon, Edward; Carpenter, Thomas  
**Sent:** 5/18/2015 12:59:20 PM  
**Subject:** HF: SAB Review and status of assessment - next steps

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Burden, Susan; LeDuc, Stephen; Ridley, Caroline  
**Sent:** 5/18/2015 11:25:09 AM  
**Subject:** HFDWA: Discussion of Executive Summary

---

**From:** Ridley, Caroline  
**To:** Ridley, Caroline; Frithsen, Jeff; Weaver, Jim; LeDuc, Stephen;  
MaryEllen.Tuccillo; Ex. 4 Howard, MarkW  
**Sent:** 5/18/2015 11:15:50 AM  
**Subject:** Term 'wastewater' in HFDWA

**Ex. 5**

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Ridley, Caroline; Johnson, Maureen  
**Sent:** 5/18/2015 9:45:13 AM  
**Subject:** HFDWA: Rollout Plan for draft Assessment

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Briskin, Jeanne; Ridley, Caroline; Bergman, Ronald; Wehling, Carrie  
**CC:** Green, Holly  
**Sent:** 5/16/2015 10:10:58 AM  
**Subject:** HFDWA: Discussion of Chapter 3

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff  
**Sent:** 5/14/2015 8:59:04 PM  
**Subject:** Release of HF Study Reports and Assessment

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Shari Ring; Burden, Susan  
**Sent:** 5/14/2015 3:38:34 PM  
**Subject:** HFDWA: Discussion of Chapter 6

---

**From:** Frithsen, Jeff  
**Sent:** 5/14/2015 8:21:18 AM  
**Subject:** Kelly Smith - Retrospective Case Studies



---

**From:** Burke, Thomas  
**To:** Burke, Thomas; Gibbons, Dayna; Smith, Kelley; Matthews, Lisa; Frithsen, Jeff; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Smith, Kelly  
**CC:** Kadeli, Lek; Kavlock, Robert; Blackburn, Elizabeth; Allen, Laura  
**Sent:** 5/7/2015 12:49:14 PM  
**Subject:** HF DW Study State Presentation and Messaging discussion  
**Attachments:** **Ex. 5**

**Ex. 6**

---

**From:** Matthews, Lisa  
**To:** Matthews, Lisa; Frithsen, Jeff; Burke, Thomas; McGrath, Shaun; Card, Joan; Gibbons, Dayna; Strauss, Alexis; Varcoe, Betsy; Smith, Kelley; Marks, Teresa; Blumenfeld, Jared; Bueno, Michael  
**CC:** Albright, David  
**Sent:** 4/30/2015 6:57:52 PM  
**Subject:** Region 8 states (and CA) briefing on Draft Assessment

CO, ND, UT, WY plus CA

POC - Lisa Matthews  
US EPA Office of Research and Development  
202-564-6669 office

**Ex. 6**

---

**From:** LeDuc, Stephen  
**To:** LeDuc, Stephen; Frithsen, Jeff; Ridley, Caroline  
**Sent:** 5/7/2015 11:47:38 AM  
**Subject:** ES/Ch10  
**Attachments:** HFDWA - Executive Summary\_20150507\_4pm.docx

**Non-Responsive**

I've pushed this start time back to 9:30am. Hopefully this still works for everyone.

Also, see latest ES attached.

---

**From:** Burke, Thomas  
**To:** Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Matthews, Lisa; Gibbons, Dayna; Teichman, Kevin; Zambrana, Jose; Briskin, Jeanne; Smith, Kelly  
**CC:** Kadeli, Lek; Kavlock, Robert; Blackburn, Elizabeth  
**Sent:** 5/5/2015 10:01:29 PM  
**Subject:** HF Retrospective State Presentation and Messaging discussion

**Ex. 6**

---

**From:** Kavlock, Robert  
**To:** Kavlock, Robert; Hanley, Mary; Perry, Dale; Frithsen, Jeff  
**Sent:** 4/30/2015 3:01:54 PM  
**Subject:** HFDWA Review

---

**From:** Matthews, Lisa  
**To:** Matthews, Lisa; Curry, Ron; Coleman, Sam; Lawrence, Rob; Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Marks, Teresa  
**Sent:** 4/30/2015 7:06:07 PM  
**Subject:** Region 6 states briefing on Draft Assessment

AR, LA, NM, OK and TX

POC - Lisa Matthews  
US EPA Office of Research and Development  
202-564-6669 office

**Ex. 6**

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Mary Hanley (Hanley.Mary@epa.gov); Perry, Dale; Kavlock, Robert  
**Sent:** 4/29/2015 4:54:05 PM  
**Subject:** HF: Feedback and all things considered

## **Non-Responsive**

Comments on HFDWA Executive Summary

Note: Bob has a conflict and most likely will not be able to join us.

---

**From:** Kavlock, Robert  
**To:** Kavlock, Robert; Hanley, Mary; Perry, Dale; Frithsen, Jeff  
**Sent:** 4/29/2015 11:14:19 AM  
**Subject:** HFDWA Review



---

**From:** Kavlock, Robert  
**To:** Kavlock, Robert; Perry, Dale; Frithsen, Jeff; Hanley, Mary  
**Sent:** 4/28/2015 3:49:24 PM  
**Subject:** HFDWA Review

---

**From:** Kavlock, Robert  
**To:** Kavlock, Robert; Perry, Dale; Hanley, Mary; Frithsen, Jeff  
**Sent:** 4/23/2015 4:48:19 PM  
**Subject:** HFDWA Followup

---

**From:** Marks, Teresa  
**To:** Marks, Teresa; Matthews, Lisa; Frithsen, Jeff; Hanley, Mary; Maddox, Donald; Gibbons, Dayna  
**Sent:** 4/24/2015 8:25:54 AM  
**Subject:** ORD HF Reports and Draft Assessment: Outreach Logistics

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Burke, Thomas; Ridley, Caroline; LeDuc, Stephen  
**Sent:** 4/23/2015 4:56:59 PM  
**Subject:** HFDWA: Discussion of Executive Summary

---

**From:** Orme-Zavaleta, Jennifer  
**To:** Orme-Zavaleta, Jennifer; Buckley, Timothy; Zambrana, Jose; Norris, Gary; Landis, Matthew; Frithsen, Jeff  
**CC:** Bennett, John  
**Sent:** 4/21/2015 1:13:08 PM  
**Subject:** Source Apportionment Comments  
**Attachments:** Comments on EPA HF Report 201504.docx

Rescheduled to today at 11:30 a.m. EDT to accommodate schedules.

---

**From:** Kavlock, Robert  
**To:** Kavlock, Robert; Perry, Dale; Hanley, Mary; Frithsen, Jeff  
**Sent:** 4/20/2015 2:41:14 PM  
**Subject:** HFDWA Followup

---

**From:** Bennett, John on behalf of Orme-Zavaleta, Jennifer  
**To:** Orme-Zavaleta, Jennifer; Bagley, Mark; Sullivan, Kate; Kraemer, Stephen; Frithsen, Jeff; Zambrana, Jose  
**CC:** Bennett, John  
**Sent:** 4/22/2015 11:25:56 AM  
**Subject:** Water Acquisition Report  
**Attachments:** Comments on Water Acquisition Report 201504.docx

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff  
**Sent:** 4/17/2015 4:13:38 PM  
**Subject:** HFDWA: SAB Ad Hoc Panel Meeting



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**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff  
**Sent:** 4/17/2015 4:12:43 PM  
**Subject:** HFDWA: SAB Teleconference

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff  
**Sent:** 4/17/2015 4:11:56 PM  
**Subject:** HFDWA: SAB Teleconference (if needed)

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff  
**Sent:** 4/17/2015 4:11:26 PM  
**Subject:** HFDWA: SAB Teleconference

---

**From:** Kavlock, Robert  
**To:** Kavlock, Robert; Perry, Dale; Hanley, Mary; Frithsen, Jeff  
**Sent:** 4/16/2015 3:55:42 PM  
**Subject:** HFDWA: Discussion of chapters - continued

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Ridley, Caroline; LeDuc, Stephen  
**Sent:** 4/16/2015 9:16:48 AM  
**Subject:** HFDWA: Schedule to the finish

I would like to discuss a more detailed schedule to get us to the finish line.

Caroline - feel free to forward to Jonathan if you think appropriate.

Jeff

---

**From:** Kavlock, Robert  
**To:** Kavlock, Robert; Frithsen, Jeff; Perry, Dale; Hanley, Mary  
**Sent:** 4/15/2015 3:12:02 PM  
**Subject:** HFDWA: Discussion of chapters - continued

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Ridley, Caroline  
**Sent:** 4/15/2015 2:18:45 PM  
**Subject:** HFDWA: Schedule and milestones

---

**From:** LeDuc, Stephen  
**To:** LeDuc, Stephen; Ridley, Caroline  
**CC:** Frithsen, Jeff; Burden, Susan  
**Sent:** 4/12/2015 3:40:07 PM  
**Subject:** Executive Summary

Hi Caroline,

I want to finalize the non-chapter specific text for the ES. Would you have two hours on Monday to do this?

Non-Responsive

Non-Responsive

Jeff and Susan, I put you as optional. Best, Steve

In case anyone wants to call in:

**Ex. 6**



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**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Ridley, Caroline; Briskin, Jeanne; Nathan Wiser (Wiser.Nathan@epa.gov); LeDuc, Stephen  
**Sent:** 4/8/2015 10:30:40 AM  
**Subject:** HFDWA: Comments on Draft Assessment

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Mary Hanley (Hanley.Mary@epa.gov); Perry, Dale; Kavlock, Robert; Teichman, Kevin; Smith, Kelley  
**Sent:** 4/7/2015 11:58:29 AM  
**Subject:** HF Report Discussion - Part 2

CT: Jeff Frithsen / Kelley Smith

**Note:** This is Part two, following on to the Wednesday 9:00 meeting. Tom is unable to participate in meeting part 2.

**Focus of both meetings is on the HF Source Apportionment and Water Acquisition Reports.**

---

**From:** Burke, Thomas  
**To:** Burke, Thomas; Frithsen, Jeff; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Smith, Kelley; Kavlock, Robert; Vandenberg, John; Stanek, John; Yost, Erin; Matthews, Lisa; Gibbons, Dayna  
**Sent:** 4/7/2015 11:26:19 AM  
**Subject:** HF Discussion: DW Chapter 9 and Tox and QSAR reports

CT: Jeff Frithsen / Kelley Smith

**Ex. 6**

---

**From:** Burke, Thomas  
**To:** Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Teichman, Kevin; Hanley, Mary; Perry, Dale; Kavlock, Robert  
**Sent:** 4/7/2015 11:22:25 AM  
**Subject:** HF Report Discussion

CT: Jeff Frithsen / Kelley Smith

## Ex. 6

**Staff:**

Mary Hanley, AO  
Dale Perry, AO  
Tom Burke, ORD  
Bob Kavlock, ORD  
Jeff Frithsen, ORD  
Kevin Teichman, ORD  
Kelley Smith, ORD

**Note:** Part one of two meetings to discuss Water Acquisition and Source Apportionment (Part 1 should focus on priority items). Jeff Frithsen will send a second invite for later in the day to cover the rest.

## Non-Responsive

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**From:** Ridley, Caroline  
**To:** Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;  
Jonathan.Koplos; Ex. 4; Yohannes, Lia; Fleming, Megan; Knightes, Chris;  
Shari.Ring; Ex. 4; Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo; Ex. 4;  
Stanek, John  
**Sent:** 4/6/2015 3:46:02 PM  
**Subject:** HFDWA weekly chapter leads call  
**Attachments:** Untitled.msg; Untitled1.msg; Untitled2.msg; Untitled3.msg; Untitled4.msg; Untitled5.msg;  
Untitled6.msg; HFDWA weekly chapter leads call; HFDWA weekly chapter leads call

Continuation of our weekly call.

Agenda to be sent week of.

---

**From:**

**To:** Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;  
Jonathan.Koplos Ex. 4 Yohannes, Lia; Fleming, Megan; Knightes, Chris;  
Shari.Ring Ex. 4 Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo Ex. 4  
Stanek, John

**Sent:****Subject:**

Agenda

Chapter status updates

~~~~~

Continuation of our weekly call.

Agenda to be sent week of.

From:

To: Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;
Jonathan.Koplos; Ex. 4; Yohannes, Lia; Fleming, Megan; Knightes, Chris;
Shari.Ring; Ex. 4; Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo; Ex. 4
Stanek, John
CC: Daiss, Rebecca

Sent:**Subject:**

Please call in for a very brief touch-base- thanks!

~~~~~  
Continuation of our weekly call.

Agenda to be sent week of.

---

**From:**

**To:** Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;  
Jonathan.Koplos; Ex. 4; Yohannes, Lia; Fleming, Megan; Knightes, Chris;  
Shari.Ring; Ex. 4; Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo; Ex. 4  
Stanek, John; Solomon, Sarah

**Sent:****Subject:**

Sorry for the schedule shuffle. Please make every effort to attend, or to at least send a chapter representative in your place if you absolutely cannot make it.

Agenda

Schedule and status

PA letters of determination



---

**From:**

**To:** Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;  
Jonathan.Koplos; **Ex. 4** Yohannes, Lia; Fleming, Megan; Knightes, Chris;  
Shari.Ring; **Ex. 4** Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo; **Ex. 4**  
Stanek, John; Solomon, Sarah

**Sent:****Subject:**

Thanks for being flexible with the timing of this meeting.

Agenda

**Non-Responsive**

Consistency check with the HF study reports  
Responding to AO comments on the ES  
Others?

~~~~~

Continuation of our weekly call.

Agenda to be sent week of.

From:

To: Ridley, Caroline; Solomon, Sarah; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;
Jonathan.Koplos [Ex. 4] Yohannes, Lia; Fleming, Megan; Knightes, Chris;
Shari.Ring [Ex. 4] Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo [Ex. 4]
Stanek, John
CC: Yost, Erin

Sent:**Subject:**

Again- apologies for the calendar shuffle.

We will be talking progress towards assembling a complete draft of the HFDWA by Monday May 11.

~~~~~  
Continuation of our weekly call.

Agenda to be sent week of.

---

**From:**

**To:** Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;  
Jonathan.Koplos Ex. 4 Yohannes, Lia; Fleming, Megan; Knightes, Chris;  
Shari.Ring Ex. 4 Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo Ex. 4  
Stanek, John; Solomon, Sarah

**Sent:****Subject:**

Sorry for the shifting times. Trying to find a slot that works for most of us ...

Continuation of our weekly call.

Agenda to be sent week of.

**From:**

**To:** Ridley, Caroline; Burden, Susan; Frithsen, Jeff; LeDuc, Stephen;  
Jonathan.Koplos [Ex. 4] Yohannes, Lia; Fleming, Megan; Knightes, Chris;  
Shari.Ring [Ex. 4] Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo [Ex. 4]  
Stanek, John; Solomon, Sarah

**Sent:**

**Subject:**

**Ex. 5**

Continuation of our weekly call.

Agenda to be sent week of.

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**From:** Ridley, Caroline  
**To:** Ridley, Caroline; Burden, Susan; LeDuc, Stephen; Jonathan.Koplos; Ex. 4; Yohannes, Lia; Fleming, Megan; Knightes, Chris; Shari.Ring; Ex. 4; Weaver, Jim; Cluff, Maryam; MaryEllen.Tuccillo; Ex. 4; Stanek, John; Frithsen, Jeff; Solomon, Sarah  
**Sent:** 5/26/2015 12:28:52 PM  
**Subject:** HFDWA weekly chapter leads call

Continuation of our weekly call.

Agenda to be sent week of.

---

**From:** Ridley, Caroline  
**To:** Yohannes, Lia; Ridley, Caroline; Solomon, Sarah; Frithsen, Jeff;  
Jonathan.Koplos; [REDACTED] Ex. 4 Knightes, Chris; Burden, Susan; LeDuc, Stephen; Fleming,  
Megan; Shari.Ring [REDACTED] Ex. 4 Weaver, Jim; Cluff, Maryam;  
MaryEllen.Tuccillo; [REDACTED] Ex. 4 Stanek, John  
**Sent:** 5/26/2015 12:37:41 PM  
**Subject:** HFDWA weekly chapter leads call

Agenda

Update on draft assessment release and post-release activities

A look towards summer/fall HFDWA-related activities for the author team

Continuation of our weekly call.

Agenda to be sent week of.

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Ridley, Caroline; John Stanek (Stanek.John@epa.gov); Yost, Erin; LeDuc, Stephen  
**Sent:** 4/6/2015 12:19:21 PM  
**Subject:** HF: Discussion of Chapter 9

Does this time work for folks?

---

**From:** Burke, Thomas  
**To:** Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John  
**CC:** Kadeli, Lek; Kavlock, Robert; Jonathan Koplos; **Ex. 4**; Shari Ring; **Ex. 4**; MaryEllen.Tuccillo; **Ex. 4**; Vandenberg, John; Walsh, Debra; Burgoon, Lyle; Yost, Erin; Fleming, Megan; Knightes, Chris  
**Sent:** 3/27/2015 1:02:13 PM  
**Subject:** HF Drinking Water Chapter Comments: Executive Summary & chapters 6 & 9 (Discussion part 1)

CT: Nathan Gentry

Teleconference: **Ex. 6**

Staff:

**Notes:** Discussion of comments for Chapters 6-10 and executive summary



---

**From:** Burke, Thomas  
**To:** Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John  
**CC:** Kavlock, Robert; Kadeli, Lek; Jonathan.Koplos **Ex. 4** Shari.Ring **Ex. 4** MaryEllen.Tuccillo **Ex. 4**; Vandenberg, John; Walsh, Debra; Yost, Erin; Burgoon, Lyle; Fleming, Megan  
**Sent:** 3/27/2015 1:02:58 PM  
**Subject:** HF Drinking Water Chapter Comments: Executive Summary & chapter 4 (Discussion part 2 - if needed)

CT: Nathan Gentry

Teleconference: **Ex. 5**

Staff:

Notes: Discussion of comments for Chapters 6-10 and executive summary

---

**From:** Burke, Thomas  
**To:** Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; LeDuc, Stephen; Fleming, Megan; Ridley, Caroline  
**CC:** Kavlock, Robert; Kadeli, Lek  
**Sent:** 3/27/2015 1:06:30 PM  
**Subject:** HF Drinking Water Chapter Comments: Chapter 4

CT: Nathan Gentry

**Notes:** Discussion of comments for Chapter 4

---

**From:** Burke, Thomas  
**To:** Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Yohannes, Lia; Knightes, Chris; Zambrana, Jose; Briskin, Jeanne; Teichman, Kevin  
**CC:** Kadeli, Lek; Kavlock, Robert; Jonathan.Koplos  
**Sent:** 3/27/2015 12:57:35 PM  
**Subject:** HF Drinking Water Chapter Comments: 1,2,3, and 5

**Ex. 4**

**CT:** Nathan Gentry

**Teleconference:** Details TBD

**Staff:**

**Notes:** Discussion of comments for Chapters 1-3 and 5.

---

**From:** Ridley, Caroline  
**To:** Ridley, Caroline; Frithsen, Jeff; LeDuc, Stephen; Fleming, Megan; Weaver, Jim; MaryEllen.Tuccillo; **Ex. 4**  
**Sent:** 3/26/2015 3:20:58 PM  
**Subject:** HF terminology: flowback, produced, wastewater

A final(?) discussion of the terms flowback, produced water, and hydraulic fracturing wastewater in the assessment.

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Zambrana, Jose  
**Sent:** 3/24/2015 8:41:44 AM  
**Subject:** HFDWA: Comment discussion

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna; Matthews, Lisa  
**CC:** Smith, Kelley  
**Sent:** 3/19/2015 8:24:15 AM  
**Subject:** HF Core Team Huddle  
**Attachments:** Untitled.msg; Untitled1.msg; HF Core Team Huddle; HF Core Team Huddle; HF Core Team Huddle; HF Core Team Huddle; HF Core Team Huddle; HF Core Team Huddle; Untitled8.msg; HF Core Team Huddle; HF Core Team Huddle

Resending Calendar invite.....

---

**From:**  
**To:** Matthews, Lisa; Teichman, Kevin; Gibbons, Dayna; Briskin, Jeanne; Zambrana, Jose  
**CC:** Smith, Kelley  
**Sent:**  
**Subject:**

Starting Monday 3/23/2015, please use the teleconference number listed above for the HF Core Team Huddle. The huddle is scheduled weekly until the end of the year. I expect that we will not have to meet all Mondays and that when we do meet, we will not need the entire hour. Thanks.

---

**From:**  
**To:** Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Matthews, Lisa; Gibbons, Dayna  
**CC:** Smith, Kelley  
**Sent:**  
**Subject:**

Starting Monday 3/23/2015, please use the teleconference number listed below for the HF Core Team Huddle. The huddle is scheduled weekly until the end of the year. I expect that we will not have to meet all Mondays and that when we do meet, we will not need the entire hour. Thanks.



---

**From:**  
**To:** Matthews, Lisa; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna  
**CC:** Smith, Kelley  
**Sent:**  
**Subject:** HF Core Team Huddle

For 4/20/15 only, I would like to move our meeting to 3:00. The rescheduling is needed due to an earlier meeting with AO staff to get comments on the draft HFDWA.

Agenda items for today:

- 1) Status of HF study reports
- 2) Status of draft assessment chapters
- 3) Outreach and communication plans
- 4) Other items as needed

Thanks.

---

**From:**  
**To:** Gibbons, Dayna; Teichman, Kevin; Briskin, Jeanne; Zambrana, Jose; Matthews, Lisa  
**CC:** Smith, Kelley  
**Sent:**  
**Subject:** HF Core Team Huddle

I need to change our usual meeting time for the huddle as today there is a conflict with the briefing with the administrator.

---

**From:**  
**To:** Gibbons, Dayna; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Matthews, Lisa  
**CC:** Smith, Kelley  
**Sent:**  
**Subject:** HF Core Team Huddle

This week's meeting conflicts with the EOP briefing. I suggest we reschedule to Tuesday. This OK with folks?

Jeff

---

**From:**  
**To:** Smith, Kelley; Zambrana, Jose; Teichman, Kevin; Matthews, Lisa; Gibbons, Dayna; Briskin, Jeanne  
**Sent:**  
**Subject:** HF Core Team Huddle

Confirming that we should caucus today.

- 1) Status of HF Study reports (all are completed and going through process of converting to 508 compliant files)
- 2) Status of communication materials for HF Study Reports
- 3) Status of Assessment report
- 4) SAB review
- 5) Other topics?

---

**From:**  
**To:** Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Matthews, Lisa; Gibbons, Dayna  
**CC:** Smith, Kelley; Deener, Kathleen  
**Sent:**  
**Subject:** HF Core Team Huddle

Rescheduling the 5/25 meeting to 5/26 to accommodate the memorial day holiday.

---

**From:**  
**To:** Briskin, Jeanne; Teichman, Kevin; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose  
**CC:** Smith, Kelley  
**Sent:**  
**Subject:**

Resending Calendar invite.....

---

**From:**  
**To:** Frithsen, Jeff; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna; Matthews, Lisa  
**CC:** Smith, Kelley  
**Sent:**  
**Subject:** HF Core Team Huddle

Rescheduling for this week. Ex. 6

---

**From:**  
**To:** Frithsen, Jeff; Matthews, Lisa; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna; Briskin, Jeanne  
**CC:** Smith, Kelley  
**Sent:**  
**Subject:** HF Core Team Huddle

Resending Calendar invite.....



---

**From:** Frithsen, Jeff  
**Sent:** 3/18/2015 6:18:49 PM  
**Subject:** HF: Discussion CSM Case Studies

---

**From:** Fleming, Megan  
**To:** Fleming, Megan; Teichman, Kevin; LeDuc, Stephen; Frithsen, Jeff  
**Sent:** 3/18/2015 3:14:11 PM  
**Subject:** Water Acquisition - Options discussion  
**Attachments:** Options for Kevin\_20150318.docx

**Ex. 5**

The options paper is attached.

**Ex. 6**

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Sullivan, Kate; Kraemer, Stephen; LeDuc, Stephen; Fleming, Megan  
**Sent:** 3/16/2015 12:53:44 PM  
**Subject:** HFDWA: Discussion of Chapter 4 - Part 2

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; LeDuc, Stephen; Fleming, Megan; Sullivan, Kate; Kraemer, Stephen  
**Sent:** 3/13/2015 1:46:05 PM  
**Subject:** HFDWA: Discussion of Chapter 4

---

**From:** LeDuc, Stephen  
**To:** LeDuc, Stephen; Frithsen, Jeff; Sullivan, Kate; Fleming, Megan; Kraemer, Stephen  
**Sent:** 3/10/2015 4:15:35 PM  
**Subject:** Discussion of Comments on Water Acquisition Chapter

Update:

Hi all,

Sorry about the last minute change, **Ex. 6** Can we move this to 1pm? If not, please suggest another time, preferably starting at 12pm or later this afternoon. Best, Steve

Hi Kate,

Jeff has asked me to find a time where we can discuss your comments on the water acquisition chapter. Does this time/date work for you? I will send around on Thursday a list of topics to talk through. Best, Steve L

**Ex. 6**

---

**From:** Burke, Thomas  
**To:** Burke, Thomas; Frithsen, Jeff; Gibbons, Dayna; Matthews, Lisa; Smith, Kelley; Dean, Jill; Teichman, Kevin; Briskin, Jeanne  
**Sent:** 3/11/2015 1:27:46 PM  
**Subject:** HF Team Check in

Note new call-in number.

Check in time to discuss timing of FracFocus and any prep needed for WH meeting on Friday.

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; John Stanek (Stanek.John@epa.gov); Ridley, Caroline; Yost, Erin; Burgoon, Lyle  
**Sent:** 3/12/2015 7:59:51 AM  
**Subject:** HFDWA: Chapter 9 Comments

John - Feel free to add others in the invitation as you see appropriate. Thanks.

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Marks, Teresa; Mary Hanley (Hanley.Mary@epa.gov)  
**CC:** Perry, Dale  
**Sent:** 3/10/2015 4:28:58 PM  
**Subject:** HF; Overview of ORD Study and Assessment



---

**From:** Burke, Thomas  
**To:** Burke, Thomas; Matthews, Lisa; Teichman, Kevin; Frithsen, Jeff; Smith, Kelley; Sonich-Mullin, Cynthia; Smith, Kelly  
**CC:** Ludwig, Ralph; Wilkin, Rick; Beak, Doug; Lowrance, Richard  
**Sent:** 3/10/2015 10:54:31 AM  
**Subject:** HF Paper Review with team

Would this time slot work for Tom and I to go over the following papers with the authors?

Kildeer, Wise, SWPA, RATON

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Ridley, Caroline; LeDuc, Stephen  
**Sent:** 3/9/2015 5:50:37 PM  
**Subject:** HFDWA: Review of comments

---

**From:** Ridley, Caroline  
**To:** Ridley, Caroline; Jonathan.Koplos Ex. 4 MaryEllen.Tuccillo Ex. 4  
Frithsen, Jeff  
**Sent:** 3/3/2015 12:56:32 PM  
**Subject:** HFDWA wastewater work  
**Attachments:** Ex. 5

We will be talking about the follow-on list of tasks in the attached document, as well as Keven Teichman's review comments.

---

**From:** Ridley, Caroline  
**To:** Frithsen, Jeff; LeDuc, Stephen; Fleming, Megan; Weaver, Jim; MaryEllen.Tuccillo  
**Sent:** 3/26/2015 3:20:53 PM  
**Subject:** HF terminology: flowback, produced, wastewater

|              |
|--------------|
| <b>Ex. 4</b> |
|--------------|

A final(?) discussion of the terms flowback, produced water, and hydraulic fracturing wastewater in the assessment.

---

**From:** Frithsen, Jeff  
**To:** Piantanida, David  
**Sent:** 6/19/2015 8:06:59 AM  
**Subject:** Accepted: Draft Assessment on the potential impacts to DW resources from HF Activities

---

**From:** Frithsen, Jeff  
**To:** Matthews, Lisa; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna  
**CC:** Smith, Kelley  
**Sent:** 6/8/2015 8:47:37 PM  
**Subject:** HF Core Team Huddle

We need to move our weekly HF Core Team Huddle once again. I scheduled on Tuesday right on top of the agency briefing on the assessment.

Let's try for Wednesday, 6/10/15 at 1:30.

The objective of this meeting is to identify any loose ends concerning the HF Study and the HF draft assessment that might need attention.

**Ex. 5**

And I'm sure there are a few more that have taken a back seat to finalizing the report.

Jeff

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**From:** Frithsen, Jeff  
**To:** Vandenberg, John; Richards, Matthew; Burden, Susan; Sonich-Mullin, Cynthia; vanDrunick, Suzanne; Ridley, Caroline; David Piantanida (Piantanida.David@epa.gov); LeDuc, Stephen; Gibbons, Dayna; Smith, Kelley; Teichman, Kevin; Houk, Virginia; Williams, Larke; Matthews, Lisa; Smith, Kelly; Briskin, Jeanne; Zambrana, Jose; Jennifer Orme-Zavaleta (Orme-Zavaleta.Jennifer@epa.gov); Fred Hauchman (hauchman.fred@epa.gov)  
**BCC:** DCRoomRRB51161  
**Sent:** 6/3/2015 9:52:10 AM  
**Subject:** Canceled: HF ORD Leadership Conference Call

I am canceling today's meeting as there are many folks that are tied-up with today's ORD EC/MC meeting.

Because of the hard work and dedicated efforts by an army of folks that have been working for many years on ORD's hydraulic fracturing study, we are in the "T-1" countdown. Tomorrow, the agency will release nine HF Study reports (2 from NERL, 2 from OSP and 5 from NRMRL) and one rather robust draft assessment report.

Thanks all!

Jeff

---

**From:** Frithsen, Jeff  
**To:** Bond, Brian  
**Sent:** 6/2/2015 4:27:38 PM  
**Subject:** Accepted: FW: Fracking Assessment Briefing



---

**From:** Frithsen, Jeff  
**To:** Maloney, Kelsey  
**Sent:** 6/2/2015 2:48:34 PM  
**Subject:** Accepted: HF Study Draft Assessment Public Webinar - 1

---

**From:** Frithsen, Jeff  
**To:** Matthews, Lisa; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna  
**CC:** Smith, Kelley  
**Sent:** 6/2/2015 8:28:18 AM  
**Subject:** HF Core Team Huddle

I would like to move next week's huddle to Tuesday as some folks are traveling on Monday. I do think it valuable for us to meet briefly just to check in to make sure there are no issues with the rollout of the reports and draft assessment.

---

**From:** Frithsen, Jeff  
**To:** Matthews, Lisa; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna  
**CC:** Smith, Kelley  
**Sent:** 6/1/2015 12:56:30 PM  
**Subject:** Canceled: HF Core Team Huddle

I'm cancelling the Core Team Huddle today. This week's focus is on the release of the HF Study Reports and the draft assessment. Lots of moving pieces, however, between Dayna, Lisa and Kelley, all seems to be coming together well.

Let me know if there is an issue, challenge, or problem that you think needs attention!

Jeff

---

**From:** Frithsen, Jeff  
**To:** Meacham, Connie  
**Sent:** 5/27/2015 10:47:55 AM  
**Subject:** Accepted: Preparing the SAB Copy of HF Report & Appendices -- & Plan of action for next week's Final Report & Final Appendices

---

**From:** Frithsen, Jeff  
**To:** Meacham, Connie  
**Sent:** 5/27/2015 10:30:48 AM  
**Subject:** Accepted: Preparing the SAB Copy of HF Report & Appendices -- & Plan of action for next week's Final Report & Final Appendices

---

**From:** Frithsen, Jeff  
**To:** Breysse, Patrick N. (CDC/ONDIEH/NCEH)  
**Sent:** 5/21/2015 10:12:58 AM  
**Subject:** Accepted: FW: New EPA Report about Fracking

---

**From:** Frithsen, Jeff  
**To:** tom Brennan (Brennan.Thomas@epa.gov); Hanlon, Edward; Carpenter, Thomas  
**Sent:** 5/18/2015 3:28:11 PM  
**Subject:** HF: SAB Review and status of assessment - next steps

---

**From:** Frithsen, Jeff  
**To:** tom Brennan (Brennan.Thomas@epa.gov); Hanlon, Edward  
**Sent:** 5/18/2015 12:59:20 PM  
**Subject:** HF: SAB Review and status of assessment - next steps



---

**From:** Frithsen, Jeff  
**To:** Matthews, Lisa; Briskin, Jeanne; Teichman, Kevin; Zambrana, Jose; Gibbons, Dayna; Smith, Kelley  
**Sent:** 5/18/2015 10:26:28 AM  
**Subject:** HF Core Team Huddle

Confirming that we should caucus today.

- 1) Status of HF Study reports (all are completed and going through process of converting to 508 compliant files)
- 2) Status of communication materials for HF Study Reports
- 3) Status of Assessment report
- 4) SAB review
- 5) Other topics?

---

**From:** Frithsen, Jeff  
**To:** Burke, Thomas  
**Sent:** 5/7/2015 12:56:01 PM  
**Subject:** Accepted: HOLD: Possible last chance time for in person HF Retrospective or HF DW Study messaging or presentation Discussion time

---

**From:** Frithsen, Jeff  
**To:** Burden, Susan  
**Sent:** 5/4/2015 6:57:42 PM  
**Subject:** HF: Comments on Spills Report

---

**From:** Frithsen, Jeff  
**To:** Mary Hanley (Hanley.Mary@epa.gov); Perry, Dale; Kavlock, Robert  
**Sent:** 4/29/2015 4:54:08 PM  
**Subject:** HF: Feedback and all things considered

**Non-Responsive**

Comments on HFDWA Executive Summary

Note: Bob has a conflict and most likely will not be able to join us.

---

**From:** Frithsen, Jeff  
**To:** Marks, Teresa  
**Sent:** 4/24/2015 8:28:18 AM  
**Subject:** Accepted: ORD HF Reports and Draft Assessment: Outreach Logistics

---

**From:** Frithsen, Jeff  
**To:** Briskin, Jeanne; Gibbons, Dayna; Matthews, Lisa; Teichman, Kevin; Zambrana, Jose  
**Sent:** 4/20/2015 9:17:40 AM  
**Subject:** HF Core Team Huddle

For 4/20/15 only, I would like to move our meeting to 3:00. The rescheduling is needed due to an earlier meeting with AO staff to get comments on the draft HFDWA.

Agenda items for today:

- 1) Status of HF study reports
- 2) Status of draft assessment chapters
- 3) Outreach and communication plans
- 4) Other items as needed

Thanks.

---

**From:** Frithsen, Jeff  
**To:** Jennifer Orme-Zavaleta (Orme-Zavaleta.Jennifer@epa.gov)  
**Sent:** 4/7/2015 3:45:30 PM  
**Subject:** Canceled: HF Report Discussion - Part 2

CT: Jeff Frithsen / Kelley Smith

**Note:** This is Part two, following on to the Wednesday 9:00 meeting. Tom is unable to participate in meeting part 2.

**Focus of both meetings is on the HF Source Apportionment and Water Acquisition Reports.**

---

**From:** Frithsen, Jeff  
**To:** Mary Hanley (Hanley.Mary@epa.gov); Perry, Dale; Kavlock, Robert; Teichman, Kevin; Jennifer Orme-Zavaleta (Orme-Zavaleta.Jennifer@epa.gov); Smith, Kelley  
**Sent:** 4/7/2015 12:04:25 PM  
**Subject:** HF Report Discussion - Part 2

CT: Jeff Frithsen / Kelley Smith

**Note:** This is Part two, following on to the Wednesday 9:00 meeting. Tom is unable to participate in meeting part 2.

**Focus of both meetings is on the HF Source Apportionment and Water Acquisition Reports.**



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**From:** Frithsen, Jeff  
**To:** Mary Hanley (Hanley.Mary@epa.gov); Perry, Dale; Kavlock, Robert; Teichman, Kevin; Jennifer Orme-Zavaleta (Orme-Zavaleta.Jennifer@epa.gov); Smith, Kelley  
**Sent:** 4/7/2015 11:58:33 AM  
**Subject:** HF Report Discussion - Part 2

CT: Jeff Frithsen / Kelley Smith

**Note:** This is Part two, following on to the Wednesday 9:00 meeting. Tom is unable to participate in meeting part 2.

**Focus of both meetings is on the HF Source Apportionment and Water Acquisition Reports.**

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**From:** Frithsen, Jeff  
**To:** Burke, Thomas  
**Sent:** 4/7/2015 11:54:03 AM  
**Subject:** Accepted: HF Report Discussion

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**From:** Frithsen, Jeff  
**To:** Burke, Thomas  
**Sent:** 4/7/2015 11:53:54 AM  
**Subject:** Accepted: HF Discussion: DW Chapter 9 and Tox and QSAR reports

---

**From:** Frithsen, Jeff  
**To:** Ridley, Caroline; John Stanek (Stanek.John@epa.gov); Yost, Erin; LeDuc, Stephen  
**Sent:** 4/6/2015 12:19:23 PM  
**Subject:** HF: Discussion of Chapter 9

Does this time work for folks?

---

**From:** Frithsen, Jeff  
**To:** Burke, Thomas  
**Sent:** 3/31/2015 10:48:43 AM  
**Subject:** Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

---

**From:** Frithsen, Jeff  
**To:** Burke, Thomas  
**Sent:** 3/31/2015 10:48:36 AM  
**Subject:** Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

---

**From:** Frithsen, Jeff on behalf of Burke, Thomas  
**To:** Jonathan Koplos; Shari Ring; Mary Ellen Tuccillo; Fleming, Megan  
**Sent:** 3/31/2015 9:20:43 AM  
**Subject:** FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

-----Original Appointment-----

**From:** Burke, Thomas

**Sent:** Friday, March 27, 2015 1:03 PM

**To:** Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John

**Subject:** HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

**When:** Tuesday, March 31, 2015 4:15 PM-5:30 PM (UTC-05:00) Eastern Time (US & Canada).

**Where:** RRB 41209 and VTC

CT: Nathan Gentry

**Teleconference:** Details TBD

**Staff:**

**Notes:** Discussion of comments for Chapters 6-10 and executive summary

---

**From:** Frithsen, Jeff on behalf of Burke, Thomas  
**To:** Jonathan Koplos; Shari Ring; Mary Ellen Tuccillo  
**Sent:** 3/31/2015 9:20:10 AM  
**Subject:** FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

-----Original Appointment-----

**From:** Burke, Thomas

**Sent:** Friday, March 27, 2015 1:02 PM

**To:** Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John

**Subject:** HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

**When:** Tuesday, March 31, 2015 12:00 PM-2:30 PM (UTC-05:00) Eastern Time (US & Canada).

**Where:** RRB 41209 and VTC

**CT:** Nathan Gentry

**Teleconference:** Details TBD

**Staff:**

**Notes:** Discussion of comments for Chapters 6-10 and executive summary



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**From:** Frithsen, Jeff on behalf of Burke, Thomas  
**To:** Knightes, Chris  
**Sent:** 3/31/2015 9:19:42 AM  
**Subject:** FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

Chris - feel free to call in should you want to listen to comments on other chapters.

Jeff

-----Original Appointment-----

**From:** Burke, Thomas

**Sent:** Friday, March 27, 2015 1:02 PM

**To:** Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John

**Subject:** HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

**When:** Tuesday, March 31, 2015 12:00 PM-2:30 PM (UTC-05:00) Eastern Time (US & Canada).

**Where:** RRB 41209 and VTC

**CT:** Nathan Gentry

**Teleconference:** Details TBD

**Staff:**

**Notes:** Discussion of comments for Chapters 6-10 and executive summary

---

**From:** Frithsen, Jeff on behalf of Burke, Thomas  
**To:** Fleming, Megan  
**Sent:** 3/31/2015 9:18:59 AM  
**Subject:** FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

Megan - just in case we get to Chapter 4 today.

-----Original Appointment-----

**From:** Burke, Thomas

**Sent:** Friday, March 27, 2015 1:02 PM

**To:** Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John

**Subject:** HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

**When:** Tuesday, March 31, 2015 12:00 PM-2:30 PM (UTC-05:00) Eastern Time (US & Canada).

**Where:** RRB 41209 and VTC

**CT:** Nathan Gentry

**Teleconference:** Details TBD

**Staff:**

**Notes:** Discussion of comments for Chapters 6-10 and executive summary

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**From:** Frithsen, Jeff  
**To:** Burke, Thomas  
**Sent:** 3/27/2015 2:36:11 PM  
**Subject:** Accepted: HF Drinking Water Chapter Comments: Chapter 4

---

**From:** Frithsen, Jeff on behalf of Burke, Thomas  
**To:** Jonathan Koplos; Shari Ring; Mary Ellen Tuccillo  
**Sent:** 3/27/2015 2:35:30 PM  
**Subject:** FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

Discussion continued if needed!

-----Original Appointment-----

**From:** Burke, Thomas

**Sent:** Friday, March 27, 2015 1:03 PM

**To:** Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John

**Subject:** HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

**When:** Tuesday, March 31, 2015 4:15 PM-5:30 PM (UTC-05:00) Eastern Time (US & Canada).

**Where:** RRB 41209 and VTC

CT: Nathan Gentry

**Teleconference:** Details TBD

**Staff:**

**Notes:** Discussion of comments for Chapters 6-10 and executive summary

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**From:** Frithsen, Jeff  
**To:** Burke, Thomas  
**Sent:** 3/27/2015 2:34:57 PM  
**Subject:** Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

---

**From:** Frithsen, Jeff on behalf of Burke, Thomas  
**To:** Jonathan Koplos; Shari Ring; Mary Ellen Tuccillo  
**Sent:** 3/27/2015 2:34:46 PM  
**Subject:** FW: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

FYI.... hope you can participate to hear Tom's comments.

-----Original Appointment-----

**From:** Burke, Thomas

**Sent:** Friday, March 27, 2015 1:02 PM

**To:** Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Zambrana, Jose; Teichman, Kevin; Briskin, Jeanne; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Weaver, Jim; Stanek, John

**Subject:** HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

**When:** Tuesday, March 31, 2015 12:00 PM-2:30 PM (UTC-05:00) Eastern Time (US & Canada).

**Where:** RRB 41209 and VTC

**CT:** Nathan Gentry

**Teleconference:** Details TBD

**Staff:**

**Notes:** Discussion of comments for Chapters 6-10 and executive summary

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**From:** Frithsen, Jeff  
**To:** Burke, Thomas  
**Sent:** 3/27/2015 2:34:07 PM  
**Subject:** Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

---

**From:** Frithsen, Jeff on behalf of Burke, Thomas  
**To:** Jonathan Koplos  
**Sent:** 3/27/2015 2:33:38 PM  
**Subject:** FW: HF Drinking Water Chapter Comments: 1,2,3, and 5

Jonathan — Hope you can call in for this.

-----Original Appointment-----

**From:** Burke, Thomas  
**Sent:** Friday, March 27, 2015 12:58 PM  
**To:** Burke, Thomas; Frithsen, Jeff; Smith, Kelley; Gibbons, Dayna; Matthews, Lisa; Ridley, Caroline; LeDuc, Stephen; Burden, Susan; Yohannes, Lia; Knightes, Chris; Zambrana, Jose; Briskin, Jeanne; Teichman, Kevin  
**Cc:** Kadeli, Lek; Kavlock, Robert  
**Subject:** HF Drinking Water Chapter Comments: 1,2,3, and 5  
**When:** Monday, March 30, 2015 4:00 PM-5:30 PM (UTC-05:00) Eastern Time (US & Canada).  
**Where:** RRB 41209 and VTC

**CT:** Nathan Gentry

**Teleconference:** Details TBD

**Staff:**

**Notes:** Discussion of comments for Chapters 1-3 and 5.



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**From:** Frithsen, Jeff  
**To:** Burke, Thomas  
**Sent:** 3/27/2015 2:32:46 PM  
**Subject:** Accepted: HF Drinking Water Chapter Comments: 1,2,3, and 5

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**From:** Frithsen, Jeff  
**To:** Burke, Thomas  
**Sent:** 3/27/2015 1:36:41 PM  
**Subject:** Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 2 - if needed)

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**From:** Frithsen, Jeff  
**To:** Burke, Thomas  
**Sent:** 3/27/2015 1:36:32 PM  
**Subject:** Accepted: HF Drinking Water Chapter Comments: Chapter 4

---

**From:** Frithsen, Jeff  
**To:** Mary Hanley (Hanley.Mary@epa.gov)  
**Sent:** 3/10/2015 4:53:10 PM  
**Subject:** HF: Overview of ORD Study and Assessment

---

**From:** Frithsen, Jeff  
**To:** Marks, Teresa  
**Sent:** 3/10/2015 4:29:00 PM  
**Subject:** HF: Overview of ORD Study and Assessment

---

**From:** Hanley, Mary  
**To:** Rivera, Keylin; Porterfield, Teri; Kukla, Alison; Jones, Knolyn; Herckis, Arian; Fritz, Matthew; Burley, Veronica; Bluhm, Kate; Anderson, Denise  
**Sent:** 5/7/2015 10:12:31 AM  
**Subject:** Accepted: Meeting RE: HF Assessment Roll-Out

---

**From:** Hanley, Mary  
**To:** Rivera, Keylin; Porterfield, Teri; Kukla, Alison; Jones, Knolyn; Herckis, Arian; Fritz, Matthew; Burley, Veronica; Bluhm, Kate; Anderson, Denise  
**Sent:** 5/6/2015 2:51:47 PM  
**Subject:** Accepted: Meeting RE: HF Assessment Roll-Out

---

**From:** ORDVirtual RoomRequests  
**To:** ORDVirtual RoomRequests; Gibbons, Dayna; Maloney, Kelsey; ORD Virtual Room 200-A/Virtual Seminar/ORD-Adobe Virtual Rooms  
**Sent:** 6/3/2015 8:08:02 AM  
**Subject:** Invitation: PSR200: Hydro Fracturing Drinking Water Assessment (dgibbons) (Jun 9 02:00 PM EDT)  
**Attachments:** ATT00001.htm; c080759.ics

Here's the link:

<https://epa.connectsolutions.com/epahfdwa/>

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From: Maloney, Kelsey  
Sent: Tuesday, June 02, 2015 12:34 PM  
To: Johnson, Allen  
Subject: 200 webinar room Tuesday 6/9, 2PM - HF Study

Hi Allen,  
Can I reserve a 200 person webinar room on Tuesday, June 9th 2015 at 2PM from 2-4? Is it possible to put HFDWA EPA employee in the URL?

We will be using Dayna's call-in: **Ex. 6** (she will be a host as well).

Thank you!

Kelsey Maloney

Student Services Contractor

Science Communications

Office of Research and Development, US EPA

O: 202-564-4131

Maloney.kelsey@epa.gov



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**From:** Maloney, Kelsey  
**To:** Maloney, Kelsey; Gibbons, Dayna; Frithsen, Jeff; Matthews, Lisa; Briskin, Jeanne; Smith, Kelley; Perry, Dale; Hubbard, Carolyn; Burke, Thomas; Bueno Michael  
**CC:** Allen, Laura; Purchia, Liz; Valentine, Julia; Hull, George; Milbourn, Cathy; Teichman, Kevin; Simunek, Diane; Ridley, Caroline  
**Sent:** 6/2/2015 2:45:09 PM  
**Subject:** HF Study Draft Assessment Public Webinar - 2

---

**From:** Maloney, Kelsey  
**To:** Maloney, Kelsey; Gibbons, Dayna; Frithsen, Jeff; Matthews, Lisa; Briskin, Jeanne; Smith, Kelley; Perry, Dale; Hubbard, Carolyn; Burke, Thomas; Bueno Michael  
**CC:** Allen, Laura; Purchia, Liz; Valentine, Julia; Hull, George; Milbourn, Cathy; Teichman, Kevin; Simunek, Diane; Ridley, Caroline  
**Sent:** 6/2/2015 2:42:26 PM  
**Subject:** HF Study Draft Assessment Public Webinar - 1

Hi all—we will be in Hurd Hall (41102 RRB) for the draft assessment public webinars on Friday.

---

**From:** Gibbons, Dayna  
**To:** Piantanida, David  
**Sent:** 6/17/2015 4:27:44 PM  
**Subject:** Accepted: Draft Assessment on the potential impacts to DW resources from HF Activities

---

**From:** Gibbons, Dayna  
**To:** Maloney, Kelsey  
**Sent:** 6/3/2015 6:49:38 PM  
**Subject:** Accepted: HF Study Draft Assessment Public Webinar - 2

---

**From:** Gibbons, Dayna  
**To:** Maloney, Kelsey  
**Sent:** 6/2/2015 2:42:46 PM  
**Subject:** Accepted: HF Study Draft Assessment Public Webinar - 1

---

**From:** Gibbons, Dayna  
**To:** Allen, Laura  
**Sent:** 5/27/2015 10:57:18 AM  
**Subject:** Declined: Region 3 chat about HF assessment/case studies

This time doesn't work for me—I have to go to Stan Meiberg's meeting on HF to go through the tic tock per Mary's request.

---

**From:** Gibbons, Dayna  
**To:** Burke, Thomas  
**Sent:** 3/27/2015 1:34:23 PM  
**Subject:** Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

---

**From:** Gibbons, Dayna  
**To:** Burke, Thomas  
**Sent:** 3/27/2015 1:06:57 PM  
**Subject:** Accepted: HF Drinking Water Chapter Comments: Chapter 4



---

**From:** Gibbons, Dayna  
**To:** Burke, Thomas  
**Sent:** 3/27/2015 1:03:52 PM  
**Subject:** Accepted: HF Drinking Water Chapter Comments: Executive Summary & chapters 6-10 (Discussion part 1)

---

**From:** Marks, Teresa  
**To:** Marks, Teresa; Auerbacher, Kevin; Parikh, Pooja; Zenick, Elliott; Wehling, Carrie; Wills, Jennifer; Hanley, Mary; Maddox, Donald; Lynch, Mary-Kay; Wakefield, Benjamin J.; Swenson, Erik; Lewis, Jen  
**CC:** Neugeboren, Steven  
**Sent:** 3/13/2015 3:11:06 PM  
**Subject:** UOG Briefing by OGC  
**Attachments:** For Kevin A 3 17 15 (2).pptx

---

**From:** Frithsen, Jeff  
**To:** Frithsen, Jeff; Hanley, Mary; Marks, Teresa  
**Sent:** 3/10/2015 4:53:12 PM  
**Subject:** HF: Overview of ORD Study and Assessment

---

**From:** Hanley, Mary  
**To:** Hanley, Mary; Maddox, Donald  
**Sent:** 4/24/2015 1:38:58 PM  
**Subject:** Accepted: ORD HF Reports and Draft Assessment: Outreach Logistics

---

**From:** Hanley, Mary  
**To:** Bond, Brian  
**Sent:** 6/2/2015 5:49:59 PM  
**Subject:** Accepted: Fracking Assessment Briefing

---

**From:** Hanley, Mary  
**To:** Marks, Teresa  
**Sent:** 4/24/2015 1:38:59 PM  
**Subject:** Accepted: ORD HF Reports and Draft Assessment: Outreach Logistics

---

**From:** Hanley, Mary  
**To:** Frithsen, Jeff  
**Sent:** 4/7/2015 4:22:13 PM  
**Subject:** Accepted: HF Report Discussion - Part 2

---

**From:** Hanley, Mary  
**To:** Burke, Thomas  
**Sent:** 4/7/2015 12:49:25 PM  
**Subject:** Accepted: HF Report Discussion



---

**From:** Hanley, Mary  
**To:** Burke, Thomas  
**Sent:** 4/7/2015 11:37:18 AM  
**Subject:** Declined: HF Report Discussion

---

**From:** Hanley, Mary  
**To:** Frithsen, Jeff  
**Sent:** 3/10/2015 4:53:35 PM  
**Subject:** Accepted: HF: Overview of ORD Study and Assessment

---

**From:** Fritz, Jason  
**To:** LeDuc, Stephen  
**Sent:** 6/9/2015 3:43:01 PM  
**Subject:** Accepted: NCEA Presentation on Draft Hydraulic Fracturing Assessment

---

**From:** Hanley, Mary  
**To:** Marks, Teresa  
**Sent:** 4/24/2015 1:38:58 PM  
**Subject:** Accepted: ORD HF Reports and Draft Assessment: Outreach Logistics

---

**From:** Frithsen, Jeff  
**To:** Marks, Teresa  
**Sent:** 4/24/2015 8:28:18 AM  
**Subject:** Accepted: ORD HF Reports and Draft Assessment: Outreach Logistics

**To:** Purchia, Liz[Purchia.Liz@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]; Perry, Dale[Perry.Dale@epa.gov]; Hanley, Mary[Hanley.Mary@epa.gov]; Gibbons, Dayna[Gibbons.Dayna@epa.gov]; Allen, Laura[Allen.Laura@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Hubbard, Carolyn[Hubbard.Carolyn@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Marks, Teresa[Marks.Teresa@epa.gov]; Bond, Brian[Bond.Brian@epa.gov]  
**From:** Ragland, Micah  
**Sent:** Thur 6/4/2015 4:48:18 PM  
**Subject:** RE: API Statement

"With this new report, it couldn't be clearer that shale development is occurring in conjunction with environmental protection and the claims by anti-fracking activists have been thoroughly debunked," a post from the **Independent Petroleum Association of America's** outreach campaign said. <http://www.cnbc.com/id/102733638>

"The assessment smashes the myth that there can be oil and gas development without impacts to drinking water," said **John Noel, the national oil and gas campaigns coordinator for Clean Water Action**. "Fracking is a complex process that poses a complex array of potential risks to drinking water." <http://fuelfix.com/blog/2015/06/04/epa-study-no-evidence-fracking-has-caused-widespread-impacts-on-drinking-water/>

**From:** Ragland, Micah  
**Sent:** Thursday, June 04, 2015 12:34 PM  
**To:** Purchia, Liz; Reynolds, Thomas; Perry, Dale; Hanley, Mary; Gibbons, Dayna; Allen, Laura; Harrison, Melissa; Hubbard, Carolyn; Burke, Thomas; Marks, Teresa; Bond, Brian  
**Subject:** RE: API Statement

Sierra Club reaction.

<http://thehill.com/policy/energy-environment/244030-epa-no-widespread-systemic-drinking-water-harms-from-fracking>

"The EPA's water quality study confirms what millions of Americans already know — that dirty oil and gas fracking contaminates drinking water," Michael Brune, executive director of the Sierra Club, said in a statement.

The group also called out the EPA for the limitations on its study and called for more thorough

research.

“Unfortunately, the EPA chose to leave many critical questions unanswered,” Brune continued. “For example, the study did not look at this issue under the lens of public health and ignored numerous threats that fracking poses to drinking water.”

**From:** Ragland, Micah

**Sent:** Thursday, June 04, 2015 12:30 PM

**To:** Purchia, Liz; Reynolds, Thomas; Perry, Dale; Hanley, Mary; Gibbons, Dayna; Allen, Laura; Harrison, Melissa; Hubbard, Carolyn; Burke, Thomas; Marks, Teresa; Bond, Brian

**Subject:** RE: API Statement

This is a quote from Lauren Pagel with Earthwork who was in the 10am briefing this morning with the environmental groups. She was quoted by Bloomberg News:

<http://www.bloomberg.com/news/articles/2015-06-04/u-s-epa-study-finds-only-limited-water-pollution-from-fracking>

An environmental group, Earthworks, pointed to sections of the study that confirmed some water pollution linked to fracking.

“Now the Obama administration, Congress, and state governments must act on that information to protect our drinking water, and stop perpetuating the oil and gas industry’s myth that fracking is safe,” said Lauren Pagel, Earthwork’s policy director.

**From:** Purchia, Liz

**Sent:** Thursday, June 04, 2015 12:25 PM

**To:** Reynolds, Thomas; Perry, Dale; Hanley, Mary; Gibbons, Dayna; Allen, Laura; Harrison, Melissa; Hubbard, Carolyn; Burke, Thomas; Marks, Teresa; Ragland, Micah; Bond, Brian

**Subject:** API Statement

"After more than five years and millions of dollars, the evidence gathered by EPA confirms what the agency has already acknowledged and what the oil and gas industry has known," said Erik Milito,

upstream group director with the American Petroleum Institute. "Hydraulic fracturing is being done safely under the strong environmental stewardship of state regulators and industry best practices."

**From:** Purchia, Liz

**Sent:** Thursday, June 04, 2015 12:23 PM

**To:** Reynolds, Thomas; Perry, Dale; Hanley, Mary; Gibbons, Dayna; Allen, Laura; Harrison, Melissa; Hubbard, Carolyn; Burke, Thomas; Marks, Teresa; Ragland, Micah; Bond, Brian

**Subject:** ANGA Comments on EPA's Release of its Study of Drinking Water and Hydraulic Fracturing

OPE will also share statements as the day goes on

Thursday, June 4, 2015

***Background:** Following is a statement by Marty Durbin, president and CEO of America's Natural Gas Alliance, on the Environmental Protection Agency's (EPA) release of its study on drinking water and hydraulic fracturing.*

"Today's draft study affirms that hydraulic fracturing does not present systemic impacts on drinking water. Our industry is committed to continuous improvement as evidenced by advances in a host of technologies, such as water recycling and use of non-potable water. The natural gas community will continue to work with states to ensure the safe and responsible development of our nation's abundant and affordable natural gas resource, which has improved air quality through greater use in power generation and fueled an American manufacturing renaissance."

Liz Purchia

Deputy Associate Administrator, Public Affairs

U.S. Environmental Protection Agency

Office: 202-564-6691

**Ex. 6**





**To:** Gibbons, Dayna[Gibbons.Dayna@epa.gov]  
**From:** Frithsen, Jeff  
**Sent:** Tue 6/2/2015 6:24:29 PM  
**Subject:** HFDWA: Secondary web site

Our primary web site for the release of the nine HF Study reports and the draft assessment is the main HF site: [www.epa.gov/hfstudy](http://www.epa.gov/hfstudy).

From the primary web site, we plan to link to the secondary site that provides all of the files for the draft assessment.

That secondary site is:

<http://cfint.rtpnc.epa.gov/ncea/prod/recordisplay.cfm?deid=244651>

Any comments on wording?

Jeff

Jeffrey B. Frithsen, Ph.D.

National Center for Environmental Assessment

Office of Research and Development

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue, SW (8623-P)

Washington, DC 20460

703-347-8623 (office phone)

Physical Office Address/Overnight Deliveries

Two Potomac Yard (North Building), Room N-7741

2733 South Crystal Drive, Arlington, VA 22202

**Cc:** Vandenberg, John[Vandenberg.John@epa.gov]; Matthews, Lisa[Matthews.Lisa@epa.gov]; Gibbons, Dayna[Gibbons.Dayna@epa.gov]  
**To:** Orme-Zavaleta, Jennifer[Orme-Zavaleta.Jennifer@epa.gov]; Hauchman, Fred[hauchman.fred@epa.gov]; Sonich-Mullin, Cynthia[Sonich-Mullin.Cynthia@epa.gov]  
**From:** Frithsen, Jeff  
**Sent:** Thur 5/7/2015 11:43:03 AM  
**Subject:** HF: Schedule for release of HF Study Reports and Draft Assessment

**Ex. 5**

Thanks all! Almost there. Really!!

Jeff

**To:** Maloney, Kelsey[Maloney.Kelsey@epa.gov]; Valentine, Julia[Valentine.Julia@epa.gov]; Allen, Laura[Allen.Laura@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Fri 6/19/2015 7:02:30 PM  
**Subject:** RE: FW: Question from HF Study webpage, documentary

To clarify, we are sending this your way bc it is from a producer of a documentary.

Thanks!

**From:** Maloney, Kelsey  
**Sent:** Friday, June 19, 2015 2:38 PM  
**To:** Valentine, Julia; Allen, Laura  
**Cc:** Gibbons, Dayna  
**Subject:** FW: Question from HF Study webpage, documentary

Hi Julia and Laura,

The question bolded below came in through the HF Study webpage.

Response (from Dayna):

The draft assessment was not designed to investigate every instance where questions have been raised about the potential impacts of hydraulic fracturing on drinking water resources—though we do conduct five case studies in areas where the public raised concerns. Rather, EPA set out to conduct a national study to determine whether there was potential for impacts to drinking water resources from hydraulic fracturing for oil and gas, and if so, to identify the drivers for those impacts. The assessment considered available peer reviewed studies, including published literature related/relevant to issues in Pavillion, WY and Parker County, TX.

Thanks- Kelsey

-----Original Message-----

Submitted on 06/19/2015 1:15PM

Submitted values are:

Name: Hope

Email: [Hope@akproductions.tv](mailto:Hope@akproductions.tv)

Comments:

hello Kelsey,

**AK Productions, where I am a producer, is doing a documentary on the politics of the fracking boom. The EPA's recent draft report on hydrofracturing's effect on our water supply will be included.**

**Can you tell us why so many data points were left out of the data set the EPA used? As example, the Carter rd contamination case in Dimock Pa, the 9 cases in Parker County Texas and the 243 cases confirmed by Pennsylvania's DEP, as example?**

**EPA states that compared to the number of wells drilled and fracked, the number of contamination cases are small; yet if all data points were not included in that assessment, how can the assessment be accurate?**

Thank you for your time,

Hope Forpeace

Producer, AK Productions

p:831.661.5363 | m:831.212.3793 | e:[Hope@akproductions.tv](mailto:Hope@akproductions.tv) | w:[AKProductions.tv](http://AKProductions.tv) Web Area:  
EPA's Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources

Kelsey Maloney

Student Services Contractor

Science Communications

Office of Research and Development, US EPA

O: 202-564-4131

[Maloney.kelsey@epa.gov](mailto:Maloney.kelsey@epa.gov)

**To:** Maloney, Kelsey[Maloney.Kelsey@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Fri 6/19/2015 6:29:56 PM  
**Subject:** RE: Form submission from: EPA's Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources Contact Us about EPA's Hydraulic Fracturing Study form

Yes-- forward it to julia valentine and laura allen w this response

# Ex. 5

-----Original Message-----

**From:** Maloney, Kelsey  
**Sent:** Friday, June 19, 2015 1:25 PM  
**To:** Gibbons, Dayna  
**Subject:** FW: Form submission from: EPA's Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources Contact Us about EPA's Hydraulic Fracturing Study form

Hello! We got this in from the webpage...asking about why we didn't use data from Dimock, Parker Co., and DEP's cases. Since it's for a documentary, should I forward it to OPA?

Thanks,  
Kelsey

-----Original Message-----

**From:** drupal\_admin@epa.gov [mailto:drupal\_admin@epa.gov]  
**Sent:** Friday, June 19, 2015 1:16 PM  
**To:** Maloney, Kelsey  
**Subject:** Form submission from: EPA's Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources Contact Us about EPA's Hydraulic Fracturing Study form

Submitted on 06/19/2015 1:15PM  
Submitted values are:

**Name:** Hope  
**Email:** Hope@akproductions.tv  
**Comments:**  
hello Kelsey,

AK Productions, where I am a producer, is doing a documentary on the politics of the fracking boom. The EPA's recent draft report on hydrofracturing's effect on our water supply will be included.

Can you tell us why so many data points were left out of the data set the EPA used? As example, the Carter rd contamination case in Dimock Pa, the 9 cases in Parker County Texas and the 243 cases confirmed by Pennsylvania's DEP, as example?

EPA states that compared to the number of wells drilled and fracked, the number of contamination cases are small; yet if all data points were not included in that assessment, how can the assessment be accurate?

Thank you for your time,



Hope Forpeace

Producer, AK Productions

p:831.661.5363 | m:831.212.3793 | e:Hope@akproductions.tv | w:AKProductions.tv Web Area: EPA's  
Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources

**To:** Perry, Dale[Perry.Dale@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Wed 6/17/2015 7:29:07 PM  
**Subject:** RE: request for review of EPA example in shale paper

Sure—in a meeting. Will work on it when I get out.

**From:** Perry, Dale  
**Sent:** Wednesday, June 17, 2015 2:39 PM  
**To:** Gibbons, Dayna  
**Cc:** Hanley, Mary  
**Subject:** FW: request for review of EPA example in shale paper

Hey there,

Could you do something on a fairly quick turnaround for me? NGA is getting ready to put out their summary of a roundtable on protectice practices and is summarizing the study in their intro piece.

Ex. 5

**Ex. 5**

Thanks!

D

Dale H. Perry, Ph.D.

Science Advisor to the Office of Public Affairs

1200 Pennsylvania Ave. N.W., Mail Code 1701A

Washington, D.C., 20460

Office: 202-564-7338

**Ex. 6**

**From:** Wasserman, Aliza [<mailto:AWasserman@NGA.ORG>]

**Sent:** Wednesday, June 17, 2015 2:09 PM

**To:** Perry, Dale

**Cc:** Cramer, Samuel; Rupp, Mark; Hanley, Mary; Kenney, James; Marks, Teresa; Frithsen, Jeff

**Subject:** RE: request for review of EPA example in shale paper

Great.

Attached is the updated one pager that has the EPA report summary and the couple of paragraphs around it to give it a bit of context. I can't copy a press release language but if we captured substantive issues incorrectly, please do advise.

Thanks for your final review... we're waiting on a couple final edits and are aiming to get this out the door within the week.

Much thanks, all.

Aliza

\*\*\*\*\*

Aliza Wasserman

Program Director, Energy & Environment

Environment, Energy & Transportation Division

National Governors Association Center for Best Practices

202-624-5387

**From:** Perry, Dale [<mailto:Perry.Dale@epa.gov>]  
**Sent:** Wednesday, June 17, 2015 1:53 PM  
**To:** Wasserman, Aliza  
**Cc:** Cramer, Samuel; Rupp, Mark; Hanley, Mary; Kenney, James; Marks, Teresa; Frithsen, Jeff  
**Subject:** Re: request for review of EPA example in shale paper

While you're doing that Aliza I would encourage you to refer to the press release and/or executive summary for language summarizing the study. Those are the edits I was planning on making.

Sent from my iPhone. Please excuse typos.

On Jun 17, 2015, at 1:48 PM, Wasserman, Aliza <[AWasserman@NGA.ORG](mailto:AWasserman@NGA.ORG)> wrote:

Hi All – I actually have a slightly updated version that I'll send you with the couple of paragraphs before and after. My apologies but I made minor edits since I last spoke with Sam. – Aliza

**From:** Cramer, Samuel  
**Sent:** Wednesday, June 17, 2015 1:03 PM  
**To:** Rupp, Mark  
**Cc:** Hanley, Mary; Kenney, James; Wasserman, Aliza; Marks, Teresa; Frithsen, Jeff; Perry, Dale  
**Subject:** RE: request for review of EPA example in shale paper

Sorry about this, we've made some edits for clarification. Here is the correct paragraph to review:

The U.S. Environmental Protection Agency (EPA) released a draft study on the potential impacts of hydraulic fracturing on drinking water resources in June 2015.[1] The study found that there are potential vulnerabilities and some limited incidents of contamination of drinking water, however, it did not find evidence of widespread systemic contamination. In a key finding, EPA identified well casing and cementing practices associated with well construction and integrity that could potentially allow for natural gas migration into drinking water resources, but no definitive link was established. Additionally, the EPA found that hydraulic fracturing in deep shale formations is unlikely to lead to chemicals

leaking into drinking water aquifers. More research is needed to better understand the risks and protective practices for shallow shale hydraulic fracturing, which constitutes the minority of wells being developed. The protective practices highlighted in this brief present an array of opportunities for state policymakers to address the vulnerabilities identified.

Again, thanks for all of your help with this!

Sam

\*\*\*\*\*

Sam Cramer

Policy Analyst

Environment, Energy and Transportation Division

National Governors Association Center for Best Practices

444 North Capitol Street, Suite 267

Washington, D.C. 20001

202-595-2681

[scramer@nga.org](mailto:scramer@nga.org)

**From:** Rupp, Mark [<mailto:Rupp.Mark@epa.gov>]

**Sent:** Wednesday, June 17, 2015 1:01 PM

**To:** Cramer, Samuel

**Cc:** Hanley, Mary; Kenney, James; Wasserman, Aliza; Marks, Teresa; Frithsen, Jeff; Perry, Dale

**Subject:** Re: request for review of EPA example in shale paper

Adding a few colleagues.

Thanks for making your report so up to date with such an inclusion!

On Jun 17, 2015, at 12:58 PM, Cramer, Samuel <[SCramer@NGA.ORG](mailto:SCramer@NGA.ORG)> wrote:

Mary and Jim,

We're looking to get out our paper on state practices to protect drinking water while developing shale energy in the next day or two, and we wanted to get this example to you for review:

“The U.S. Environmental Protection Agency (EPA) released a draft study on the potential impacts of hydraulic fracturing on drinking water resources in June 2015. The study finds there are potential vulnerabilities and some limited incidents of contamination of drinking water, and it did not find evidence of widespread systemic contamination. One of the key findings is that the EPA identified mechanisms related to the well casing and cementing that could potentially allow for gas migration associated with well construction and integrity into drinking water resources, but no definitive link was established. Additionally, the EPA found that hydraulic fracturing in deep shale formations is unlikely to lead to chemicals leaking in to drinking water aquifers. More research is needed to better understand the risks and protective practices for shallow shale hydraulic fracturing, which constitutes the minority of wells being developed. The protective practices highlighted in this brief present an array of opportunities for state policymakers to address the vulnerabilities identified.”

If you could review this to ensure it is accurate as soon as you are able, we would really appreciate it! Thanks much for all of your help.

All the best,

Sam

\*\*\*\*\*

Sam Cramer

Policy Analyst

Environment, Energy and Transportation Division

National Governors Association Center for Best Practices

444 North Capitol Street, Suite 267

Washington, D.C. 20001

202-595-2681

[scramer@nga.org](mailto:scramer@nga.org)

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**To:** Williams, Larke[Williams.Larke@epa.gov]; Lung, Tai[Lung.Tai@epa.gov]; Balassiano, Kim[Balassiano.Kim@epa.gov]; Olp, Kevin[Olp.Kevin@epa.gov]  
**Cc:** Maloney, Kelsey[Maloney.Kelsey@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Mon 6/15/2015 2:34:43 PM  
**Subject:** RE: EJSCREEN

This is not something we would respond to from ORD. Sorry. In general HF is regulated at the state level. I would recommend she get in touch w the state or local organizations.

**From:** Williams, Larke  
**Sent:** Thursday, June 11, 2015 4:06 PM  
**To:** Lung, Tai; Balassiano, Kim; Olp, Kevin  
**Cc:** Gibbons, Dayna; Maloney, Kelsey  
**Subject:** RE: EJSCREEN

Hi Tai,

I have copied the ORD's communications person covering hydraulic fracturing, Dayna Gibbons.

I would suggest pointing Christine to EPA's recently release [Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources](http://www2.epa.gov/hfstudy) (<http://www2.epa.gov/hfstudy>) to provide some information on hydraulic fracturing.

Dayna any other suggestions?

Cheers,

Larke Williams  
Environmental Engineer  
Office Research and Development  
US Environmental Protection Agency  
Phone: 202-564-0664

**Ex. 6**



**From:** Lung, Tai  
**Sent:** Thursday, June 11, 2015 3:01 PM  
**To:** Balassiano, Kim; Olp, Kevin  
**Cc:** Williams, Larke  
**Subject:** RE: EJSCREEN

Kim,

I think Larke Williams may work on fracking. However we should have the conversation about what questions we can and cannot answer soon.

Tai

**Tai C. Lung** | U.S. Environmental Protection Agency | On detail to: OECA| OEJ | Tel 202.566.1296 | Cell

**Ex. 6**

[lung.tai@epa.gov](mailto:lung.tai@epa.gov)

**From:** Balassiano, Kim  
**Sent:** Thursday, June 11, 2015 2:47 PM  
**To:** ENVIROMAIL GROUP; Lung, Tai; Olp, Kevin  
**Subject:** RE: EJSCREEN

Thanks Julie!

Tai or Kevin – do we have a contact in the part of EPA that handles fracking?

**Ex. 5**

**Ex. 5**

If you have no idea then let me know and I will come up with something...

Kim

**From:** Julie Meloro [<mailto:Meloro.Julie@epamail.epa.gov>] **On Behalf Of** Enviromail Group  
**Sent:** Thursday, June 11, 2015 1:57 PM  
**To:** Balassiano, Kim  
**Subject:** Re: EJSCREEN

Kim - here's another I could use help with!

Thanks so much,  
Julie

drupal\_admin---06/10/2015 11:18:43 PM---drupal\_admin

drupal\_admin

06/10/2015 11:18 PM

ENVIROMAIL GROUP@EPA

Please respond to  
"Christine"  
<[christine.nyholm@gmail.com](mailto:christine.nyholm@gmail.com)>

cc

~~RE: EJSCREEN~~

Submitted on 06/10/2015 11:18PM  
Submitted values are:

Name: Christine  
Email: [christine.nyholm@gmail.com](mailto:christine.nyholm@gmail.com)  
Comments: Synergy Oil is planning a major oil and gas well project in my neighborhood. Any way to use EJSCREEN to help us stop their drilling in our unincorporated county neighborhood? I am desperate - they want to put in 18 wells.

**To:** Bueno, Michael[Bueno.Michael@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Tue 6/9/2015 5:08:50 PM  
**Subject:** Re: Technical Roundtable on Draft HFDWA meeting this week

Perfect!!

Sent from my iPhone

On Jun 9, 2015, at 1:07 PM, Bueno, Michael <[Bueno.Michael@epa.gov](mailto:Bueno.Michael@epa.gov)> wrote:

Thank you both! Here is my adapted version. Feel free to comment.



**Ex. 5**

# Ex. 5

Michael

**From:** Maloney, Kelsey

**Sent:** Tuesday, June 09, 2015 12:19 PM

**To:** Gibbons, Dayna; Bueno, Michael

**Subject:** RE: Technical Roundtable on Draft HFDWA meeting this week

Hi Michael,

# Ex. 5

# Ex. 5

Kelsey

**From:** Gibbons, Dayna  
**Sent:** Tuesday, June 09, 2015 12:14 PM  
**To:** Bueno, Michael  
**Cc:** Maloney, Kelsey  
**Subject:** Re: Technical Roundtable on Draft HFDWA meeting this week

# Ex. 5

I can look at it to help.

Sent from my iPhone

On Jun 9, 2015, at 12:04 PM, Bueno, Michael <[Bueno.Michael@epa.gov](mailto:Bueno.Michael@epa.gov)> wrote:

Hi Dayna,

To be honest, I'm not sure what Lisa is looking for here. I would guess that adapting Tom's script a bit would do?

Michael

**From:** Matthews, Lisa  
**Sent:** Tuesday, June 09, 2015 11:01 AM  
**To:** Bueno, Michael  
**Subject:** Fwd: Technical Roundtable on Draft HFDWA meeting this week

Please work with Dayna to develop some short introductory remarks for Bob K to deliver on tomorrow's webinar. And get Maureen a copy of the materials. Thanks.

Sent from my iPhone

Begin forwarded message:

**From:** "Matthews, Lisa" <[Matthews.Lisa@epa.gov](mailto:Matthews.Lisa@epa.gov)>  
**Date:** June 8, 2015 at 4:26:48 PM MDT  
**To:** "Gwinn, Maureen" <[gwinn.maureen@epa.gov](mailto:gwinn.maureen@epa.gov)>  
**Cc:** "Frithsen, Jeff" <[Frithsen.Jeff@epa.gov](mailto:Frithsen.Jeff@epa.gov)>, "Gibbons, Dayna" <[Gibbons.Dayna@epa.gov](mailto:Gibbons.Dayna@epa.gov)>, "Bueno, Michael" <[Bueno.Michael@epa.gov](mailto:Bueno.Michael@epa.gov)>  
**Subject:** Re: Technical Roundtable on Draft HFDWA meeting this week

We'll get you a brief script, intro remarks on Wed am. Michael, please make sure Hurd Hall is reserved. Thanks.

Sent from my iPhone

On Jun 8, 2015, at 10:51 AM, Gwinn, Maureen <[gwinn.maureen@epa.gov](mailto:gwinn.maureen@epa.gov)> wrote:

Hi Jeff –

Congrats again on last week!!! Hope you had a great weekend.

Just circling back about this – if you can give me any bkgd on this meeting this week for Bob – if he is to do an intro, or any other talking points? It looks like you are presenting, so if you can share that file as well that might help. Bob has a meeting at 3:30 that he'll have to leave for, so just trying to get things worked out.

Also, the invitation for Bob is asking someone to book Hurd Hall – not sure that ever happened? Can you let me know the location of the meeting that would be great.

Cc-ing Lisa in case she happens to be checking email while out.

Thanks,

Maureen

Maureen R. Gwinn, PhD DABT ATS

Special Assistant

Immediate Office of the Assistant Administrator

Office of Research and Development  
1200 Pennsylvania Ave NW

MC 8101R  
Washington, DC 20460

t(202)564-4621

f(202)565-2430

**Ex. 6**

**To:** Allen, Laura[Allen.Laura@epa.gov]; Milbourn, Cathy[Milbourn.Cathy@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]  
**Cc:** Hubbard, Carolyn[Hubbard.Carolyn@epa.gov]; Maguire, Megan[Maguire.Megan@epa.gov]; Valentine, Julia[Valentine.Julia@epa.gov]; Maloney, Kelsey[Maloney.Kelsey@epa.gov]; Hull, George[Hull.George@epa.gov]; Lehman, Rachel[Lehman.Rachel@epa.gov]; Perry, Dale[Perry.Dale@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Mon 6/8/2015 7:56:47 PM  
**Subject:** RE: Press Request-- please respond

**Ex. 5**

**From:** Allen, Laura  
**Sent:** Monday, June 08, 2015 3:52 PM  
**To:** Gibbons, Dayna; Milbourn, Cathy; Purchia, Liz  
**Cc:** Hubbard, Carolyn; Maguire, Megan; Valentine, Julia; Maloney, Kelsey; Hull, George; Lehman, Rachel; Perry, Dale  
**Subject:** RE: Press Request-- please respond



The Vice News reporter, Laura Dattaro, is looking for the number of documented impacts from the assessment. She doesn't have a hard deadline but was hoping for info tonight or tomorrow.

**Ex. 5**

**Ex. 5**

Q

## Ex. 5

**From:** Gibbons, Dayna  
**Sent:** Monday, June 08, 2015 2:55 PM  
**To:** Milbourn, Cathy; Purchia, Liz  
**Cc:** Hubbard, Carolyn; Maguire, Megan; Valentine, Julia; Allen, Laura; Maloney, Kelsey; Hull, George; Lehman, Rachel; Perry, Dale  
**Subject:** Press Request-- please respond

Hi Cathy—Jeff called into his vm from Aspen and said that a reporter named Laura from Vice(?) or maybe Vox News wanted a call back re: the study. She said she was working on deadline- 443-745-2198

**To:** mrlc@mac.com[mrlc@mac.com]  
**From:** Gibbons, Dayna  
**Sent:** Mon 6/8/2015 6:41:26 PM  
**Subject:** Link to slides from EPA webinar

I'm sorry you had trouble joining the webinar last week. You can find a link to the presentation at:

<http://www2.epa.gov/hfstudy/draft-assessment-potential-impacts-hydraulic-fracturing-oil-and-gas-drinking-water-resources>

Thanks,

Dayna Gibbons

202-564-7983

[gibbons.dayna@epa.gov](mailto:gibbons.dayna@epa.gov)

Communications

Office of Research and Development

U.S. Environmental Protection Agency

**Cc:** Maguire, Megan[Maguire.Megan@epa.gov]  
**To:** Hubbard, Carolyn[Hubbard.Carolyn@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Mon 6/8/2015 1:46:42 PM  
**Subject:** Fwd: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette

If you ever need an official portrait of Tom b

Sent from my iPhone

Begin forwarded message:

**From:** "Vance, Eric" <Vance.Eric@epa.gov>  
**Date:** June 8, 2015 at 8:08:36 AM EDT  
**To:** "Gibbons, Dayna" <Gibbons.Dayna@epa.gov>, "Smith, Kelley" <Smith.Kelley@epa.gov>, "Gentry, Nathan" <Gentry.Nathan@epa.gov>  
**Subject: RE: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette**

Tom's portrait is posted on Multimedia's Intranet site under Official Portraits tab. Link below my signature.

Regards,

Eric Vance  
 Chief Photographer, USEPA  
 Office of the Administrator  
 1200 Pennsylvania Ave, NW  
 Washington, DC 20640  
 WJC-North, Room 6330K

202.564.2655 office

**Ex. 6**

\*\*\*

Link to Office of Multimedia photo galleries, accessible from within EPA's network.

<http://intranet.epa.gov/media/>

\*\*\*

-----Original Message-----

From: Gibbons, Dayna  
 Sent: Friday, June 05, 2015 9:49 AM  
 To: Smith, Kelley; Gentry, Nathan

Cc: Vance, Eric  
Subject: RE: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette

Probably too late. Story ran last night. But good to have here for future requests.

-----Original Message-----

From: Smith, Kelley  
Sent: Friday, June 05, 2015 9:48 AM  
To: Gentry, Nathan; Gibbons, Dayna  
Cc: Vance, Eric  
Subject: RE: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette

Eric Vance may have a high res photo of tom. There is also a headshot with his bio on the epa website that may do the trick

Best,

KS

Kelley Smith  
Program Advisor  
Office of Research and Development  
Environmental Protection Agency  
202.564.2308 (Desk)  
202.308.6587 (Cell)  
[Smith.Kelley@epa.gov](mailto:Smith.Kelley@epa.gov)

-----Original Message-----

From: Gentry, Nathan  
Sent: Thursday, June 04, 2015 4:47 PM  
To: Gibbons, Dayna; Smith, Kelley  
Subject: RE: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette

I don't have a copy of those.

Nathan Gentry  
Scheduler for Tom Burke, Lek Kadeli and Bob Kavlock EPA Office of Research and Development  
Phone: 202-564-9084  
Fax: 202-565-2430

-----Original Message-----

From: Gibbons, Dayna

Sent: Thursday, June 04, 2015 4:29 PM  
 To: Smith, Kelley; Gentry, Nathan  
 Subject: FW: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette

Do you have a high res version of the picture of Tom for nbc in Youngstown.

-----Original Message-----

From: Milbourn, Cathy  
 Sent: Thursday, June 04, 2015 4:22 PM  
 To: Gibbons, Dayna  
 Subject: RE: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette

I will send him a correction- On another note- do you have an image of Tom Burke? NBC affiliate in Youngstown will likely use our audio and would like a photo of Tom. Was anyone else speaking? I wasn't in the room.

Cathy

Catherine C. Milbourn  
 U.S. EPA HQ  
 Office of the Administrator  
 Office of Media Relations  
 202-564-7849 (office)

**Ex. 6**

[Milbourn.cathy@epa.gov](mailto:Milbourn.cathy@epa.gov)

-----Original Message-----

From: Gibbons, Dayna  
 Sent: Thursday, June 04, 2015 4:18 PM  
 To: Milbourn, Cathy  
 Subject: RE: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette

**Ex. 5**

-----Original Message-----

From: Gibbons, Dayna  
 Sent: Thursday, June 04, 2015 4:10 PM  
 To: Milbourn, Cathy; Purchia, Liz; Hubbard, Carolyn  
 Cc: Lehman, Rachel; Allen, Laura; Hull, George; Valentine, Julia; Hanley, Mary; Maguire, Megan; Maloney, Kelsey; Lee, Monica; Perry, Dale  
 Subject: RE: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up

question on fracknig report; Ken Ward--Charleston Gazette

:)

-----Original Message-----

From: Milbourn, Cathy

Sent: Thursday, June 04, 2015 4:03 PM

To: Purchia, Liz; Gibbons, Dayna; Hubbard, Carolyn

Cc: Lehman, Rachel; Allen, Laura; Hull, George; Valentine, Julia; Hanley, Mary; Maguire, Megan; Maloney, Kelsey; Lee, Monica; Perry, Dale; Milbourn, Cathy

Subject: RE: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette

Thank you- ignore my recent email -- you guys rock!

Catherine C. Milbourn

U.S. EPA HQ

Office of the Administrator

Office of Media Relations

202-564-7849 (office)

**Ex. 6**

[Milbourn.cathy@epa.gov](mailto:Milbourn.cathy@epa.gov)

-----Original Message-----

From: Purchia, Liz

Sent: Thursday, June 04, 2015 4:02 PM

To: Gibbons, Dayna; Milbourn, Cathy; Hubbard, Carolyn

Cc: Lehman, Rachel; Allen, Laura; Hull, George; Valentine, Julia; Hanley, Mary; Maguire, Megan; Maloney, Kelsey; Lee, Monica; Perry, Dale

Subject: RE: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette

Cathy - This is fine to share. You can send from me.

-----Original Message-----

From: Gibbons, Dayna

Sent: Thursday, June 04, 2015 3:56 PM

To: Purchia, Liz; Milbourn, Cathy; Hubbard, Carolyn

Cc: Lehman, Rachel; Allen, Laura; Hull, George; Valentine, Julia; Hanley, Mary; Maguire, Megan; Maloney, Kelsey; Lee, Monica; Perry, Dale

Subject: RE: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette

**Ex. 5**



# Ex. 5

-----Original Message-----

From: Purchia, Liz

Sent: Thursday, June 04, 2015 3:51 PM

To: Gibbons, Dayna; Milbourn, Cathy; Hubbard, Carolyn

Cc: Lehman, Rachel; Allen, Laura; Hull, George; Valentine, Julia; Hanley, Mary; Maguire,

Megan; Maloney, Kelsey; Lee, Monica; Perry, Dale  
Subject: RE: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up  
question on fracknig report; Ken Ward--Charleston Gazette

He's going to want specific examples

-----Original Message-----

From: Gibbons, Dayna

Sent: Thursday, June 04, 2015 3:51 PM

To: Milbourn, Cathy; Hubbard, Carolyn

Cc: Purchia, Liz; Lehman, Rachel; Allen, Laura; Hull, George; Valentine, Julia; Hanley, Mary; Maguire, Megan; Maloney, Kelsey; Lee, Monica; Perry, Dale

Subject: RE: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up  
question on fracknig report; Ken Ward--Charleston Gazette

## Ex. 5

"In particular, data limitations preclude a determination of the frequency of impacts with any certainty."

Yet, the subheadline of EPA's press release cites a finding of no "widespread, systematic impacts" and the report itself claims that "The number of identified cases, however, was small compared to the number of hydraulically fractured wells."

Exactly what number of "identified cases" is EPA referring to, and where in the report are those cases listed or those numbers spelled out?

I need an on-the-record response in which I quote an EPA official by name, and my deadline is 4 p.m.

Thanks, Ken Ward Jr.

# Ex. 5

-----Original Message-----

From: Milbourn, Cathy  
Sent: Thursday, June 04, 2015 3:37 PM  
To: Gibbons, Dayna; Hubbard, Carolyn  
Cc: Purchia, Liz; Lehman, Rachel; Allen, Laura; Hull, George; Valentine, Julia; Hanley, Mary; Maguire, Megan; Maloney, Kelsey; Lee, Monica; Perry, Dale; Milbourn, Cathy  
Subject: RE: (ORD): Ken's Deadline is approaching-- DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette

Anything for Ken?

Catherine C. Milbourn  
U.S. EPA HQ  
Office of the Administrator  
Office of Media Relations  
202-564-7849 (office)  
202-420-8648 (mobile)  
[Milbourn.cathy@epa.gov](mailto:Milbourn.cathy@epa.gov)

-----Original Message-----

From: Milbourn, Cathy  
Sent: Thursday, June 04, 2015 3:02 PM  
To: Gibbons, Dayna; Hubbard, Carolyn  
Cc: Purchia, Liz; Lehman, Rachel; Allen, Laura; Hull, George; Valentine, Julia; Hanley, Mary; Maguire, Megan; Maloney, Kelsey; Lee, Monica; Perry, Dale  
Subject: RE: (ORD): DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette

Adding Dale Perry to this list so she can review.

-----Original Message-----

From: Milbourn, Cathy  
Sent: Thursday, June 04, 2015 2:27 PM  
To: Gibbons, Dayna; Hubbard, Carolyn  
Cc: Purchia, Liz; Lehman, Rachel; Allen, Laura; Hull, George; Valentine, Julia; Hanley, Mary; Maguire, Megan; Maloney, Kelsey; Lee, Monica; Milbourn, Cathy  
Subject: (ORD): DDL 6/4--NLT 4 pm follow-up question on fracknig report; Ken Ward--Charleston Gazette

Cathy,

The EPA fracking/drinking water report states that:

"In particular, data limitations preclude a determination of the frequency of impacts with any certainty."

Yet, the subheadline of EPA's press release cites a finding of no "widespread, systematic impacts" and the report itself claims that "The number of identified cases, however, was small compared to the number of hydraulically fractured wells."

Exactly what number of "identified cases" is EPA referring to, and where in the report are those cases listed or those numbers spelled out?

I need an on-the-record response in which I quote an EPA official by name, and my deadline is 4 p.m.

Thanks, Ken Ward Jr.

Ken Ward Jr.  
Staff Writer  
The Charleston Gazette  
1001 Virginia St., East  
Charleston, W.Va. 25301  
(304) 348-1702  
Fax: (304) 348-1233

<http://wvgazette.com> or <http://wvgazette.com/News/MiningtheMountains>

Read my blog, Coal Tattoo at <http://blogs.wvgazette.com/coalattoo/> and follow me on Twitter, <http://twitter.com/Kenwardjr> And check out Sustained Outrage, a Gazette watchdog journalism blog, <http://blogs.wvgazette.com/watchdog/>

**To:** allie\_carver23@hotmail.com[allie\_carver23@hotmail.com]  
**From:** Gibbons, Dayna  
**Sent:** Fri 6/5/2015 8:55:35 PM  
**Subject:** Thanks for your email re: EPA's draft assessment on the potential impacts of hydraulic fracturing for oil and gas on drinking water resources

Thanks for your email. To clarify--the purpose of the study was not to count every instance of impacts to drinking water resources. The purpose was to follow the water and to better understand the potential vulnerabilities. In the draft assessment we looked at all the hydraulic fracturing activities that may have had potential impacts to drinking water resources and make mention of specific events throughout the chapters that serve as examples and illustrate vulnerabilities.

Based upon the information brought together for the assessment – information drawn from over 950 citations– we did not identify widespread impacts on drinking water resources due to hydraulic fracturing operations. The information available is adequate to qualitatively characterize the frequency of occurrence as being small, particularly relative to the number of wells that are hydraulically fractured each year. That same information, however, is not sufficient to quantitatively measure occurrence nationwide. That was one of the information gaps highlighted by the assessment.

I hope this is helpful!

Dayna

202-564-7983

[gibbons.dayna@epa.gov](mailto:gibbons.dayna@epa.gov)

Communications

Office of Research and Development

U.S. Environmental Protection Agency



**To:** Milbourn, Cathy[Milbourn.Cathy@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Fri 6/5/2015 6:49:35 PM  
**Subject:** Re: Graph for Ken Ward, Charleston Gazette

**Ex. 5**

Sent from my iPhone

On Jun 5, 2015, at 2:47 PM, Milbourn, Cathy <[Milbourn.Cathy@epa.gov](mailto:Milbourn.Cathy@epa.gov)> wrote:

Dayna: just keeping track of open inquires. Need to send Ken ward a paragraph that sums up Tom's comments after the close of the interview.

Thanks Cathy

Catherine C. Milbourn

U.S. EPA HQ

Office of the Administrator

Office of Media Relations

202-564-7849 (office)

**Ex. 6**

[Milbourn.cathy@epa.gov](mailto:Milbourn.cathy@epa.gov)



**To:** Dowd, Sean[Dowd.Sean@epa.gov]  
**Cc:** Kapuscinski, Jacques[Kapuscinski.Jacques@epa.gov]; Hubbard, Carolyn[hubbard.carolyn@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Thur 6/4/2015 8:05:26 PM  
**Subject:** Amazing Support

I just wanted to let you know that Jacques and his team provided AMAZING support to us for the HF Assessment announcement. Not a hiccup. A huge thank you to him and his team. We couldn't have done it without them!

202-564-7983

[gibbons.dayna@epa.gov](mailto:gibbons.dayna@epa.gov)

Communications

Office of Research and Development

U.S. Environmental Protection Agency

**To:** Frithsen, Jeff[Frithsen.Jeff@epa.gov]  
**Cc:** Maloney, Kelsey[Maloney.Kelsey@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Tue 6/2/2015 8:56:04 PM  
**Subject:** FW: draft HFDWA fact sheet 5 28.docx  
[draft HFDWA fact sheet 5 28 KCD.docx](#)

Please comment on top of these edits

**From:** Deener, Kathleen  
**Sent:** Thursday, May 28, 2015 12:26 PM  
**To:** Gibbons, Dayna; Frithsen, Jeff  
**Cc:** Briskin, Jeanne; Perry, Dale  
**Subject:** RE: draft HFDWA fact sheet 5 28.docx

Hi Dayna – thanks for the opportunity to comment. I’ve offered a few minor suggestions for your consideration.

Thanks,

Kacee Deener, MPH

Office of Research and Development

(ph) 202.564.1990 | (mobile) 202.510.1490

[deener.kathleen@epa.gov](mailto:deener.kathleen@epa.gov)

**From:** Gibbons, Dayna  
**Sent:** Thursday, May 28, 2015 12:01 PM  
**To:** Frithsen, Jeff; Deener, Kathleen  
**Cc:** Briskin, Jeanne; Perry, Dale  
**Subject:** draft HFDWA fact sheet 5 28.docx

This incorporates changes from Jeanne, which Dale also liked. Please let me know if you have any additional changes today.

Thanks and sorry for the short turn around.....

**To:** Smith, Kelly[Smith.Kelly@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Tue 6/2/2015 3:55:28 PM  
**Subject:** schedule for thursday  
Top Lines HF 6 1 15 draft final (7).docx

202-564-7983

[gibbons.dayna@epa.gov](mailto:gibbons.dayna@epa.gov)

Communications

Office of Research and Development

U.S. Environmental Protection Agency

**To:** Perry, Dale[Perry.Dale@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Wed 5/6/2015 8:43:04 PM  
**Subject:** overall study Qs\_May 2015.docx  
overall study Qs\_May 2015.docx

**To:** Perry, Dale[Perry.Dale@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Mon 5/4/2015 4:16:51 PM  
**Subject:** Can you give me initial feedback on this updated desk statement for the spills report?

## Review of State and Industry Spill Data: Characterization of Hydraulic Fracturing-Related Spills

### **DESK STATEMENT**

**Ex. 5**

[gibbons.dayna@epa.gov](mailto:gibbons.dayna@epa.gov)

Communications

Office of Research and Development

U.S. Environmental Protection Agency

**To:** Bueno, Michael[Bueno.Michael@epa.gov]  
**Cc:** Matthews, Lisa[Matthews.Lisa@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Mon 5/4/2015 3:58:15 PM  
**Subject:** RE: final draft invite for R8 tribes

Minor tweak.... What do you think?

**From:** Bueno, Michael  
**Sent:** Monday, May 04, 2015 11:36 AM  
**To:** Gibbons, Dayna  
**Cc:** Matthews, Lisa  
**Subject:** FW: final draft invite for R8 tribes

Hi Dayna,

**Ex. 5**

**Ex. 5**

Just want to know your thoughts on it.

Thank you!

Michael



**From:** Matthews, Lisa  
**Sent:** Monday, May 04, 2015 11:29 AM  
**To:** Bueno, Michael  
**Subject:** RE: final draft invite for R8 tribes

Please ask Dayna about embargoed/restricted

**From:** Bueno, Michael  
**Sent:** Monday, May 04, 2015 11:13 AM  
**To:** Matthews, Lisa  
**Subject:** RE: final draft invite for R8 tribes

**DRAFT**

**Ex. 5**

# Ex. 5

Contact:

Lisa Matthews, EPA Office of Research and Development

202-564-6669 office

**Ex. 6**

[matthews.lisa@epa.gov](mailto:matthews.lisa@epa.gov)

**From:** Matthews, Lisa

**Sent:** Monday, May 04, 2015 10:05 AM

**To:** Bueno, Michael

**Subject:** FW: final draft invite for R8 tribes

**Ex. 5**

**From:** Mitre, Alfreda

**Sent:** Monday, May 04, 2015 11:02 AM

**To:** Matthews, Lisa

**Subject:** RE: final draft invite for R8 tribes

# Ex. 5

Alfreda L. Mitre | Director, Tribal Assistance Program | 303.312.6343

1595 Wynkoop | Denver, CO | 80202

**From:** Matthews, Lisa

**Sent:** Monday, May 04, 2015 8:45 AM

**To:** Mitre, Alfreda; Ebbert, Laura

**Cc:** Albright, David

**Subject:** final draft invite for R8 tribes

**Importance:** High

Any final comments – invitations are going out today. Do tribes have videoconference capability? Thank you!

---

**DRAFT**

# Ex. 5

# Ex. 5

Contact:

Lisa Matthews, EPA Office of Research and Development

202-564-6669 office

**Ex. 6**

matthews.lisa@epa.gov

**To:** Frithsen, Jeff[Frithsen.Jeff@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Mon 5/4/2015 2:40:59 PM  
**Subject:** RE: HF: Draft Briefing for the EOP

# Ex. 5

**From:** Frithsen, Jeff  
**Sent:** Monday, May 04, 2015 10:32 AM  
**To:** Burke, Thomas  
**Cc:** Smith, Kelley; Briskin, Jeanne; Gibbons, Dayna; Matthews, Lisa; Teichman, Kevin; Zambrana, Jose  
**Subject:** RE: HF: Draft Briefing for the EOP

I received several comments and great suggestions. Attached is a revised version of the briefing.

Jeff

Jeff Frithsen

USEPA-ORD-NCEA

703-347-8623 (office phone)

**From:** Frithsen, Jeff  
**Sent:** Monday, May 04, 2015 9:23 AM  
**To:** Burke, Thomas  
**Cc:** Smith, Kelley; Briskin, Jeanne; Gibbons, Dayna; Matthews, Lisa; Teichman, Kevin; Zambrana, Jose  
**Subject:** HF: Draft Briefing for the EOP

Attached is a draft of the briefing for the EOP this afternoon.

This reflects revisions to presentations made last week.

Comments and suggestions welcome, but needed this morning so as to finalize at noon and make a few copies.

Thanks all.

Jeff

Jeffrey B. Frithsen, Ph.D.

National Center for Environmental Assessment

Office of Research and Development

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue, SW (8623-P)

Washington, DC 20460

703-347-8623 (office phone)

Physical Office Address/Overnight Deliveries

Two Potomac Yard (North Building), Room N-7741

2733 South Crystal Drive, Arlington, VA 22202

**To:** Allen, Laura[Allen.Laura@epa.gov]; Perry, Dale[Perry.Dale@epa.gov]; Hanley, Mary[Hanley.Mary@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]  
**Cc:** Loop, Travis[Loop.Travis@epa.gov]  
**To:** Hubbard, Carolyn[Hubbard.Carolyn@epa.gov]  
**Cc:** Milbourn, Cathy[Milbourn.Cathy@epa.gov]; Matthews, Lisa[Matthews.Lisa@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Wed 4/8/2015 2:58:15 PM  
**Subject:** HF Communications Discussion

Hi folks—there's not much to discuss this week. Next week, once we have the schedule hashed out a bit more, and Lisa Matthews can join us, I'd like to start talking about strategies for state outreach w re to the case studies and the assessment.

Let me know if youre okay with cancelling for tomorrow.

Dayna

202-564-7983

[gibbons.dayna@epa.gov](mailto:gibbons.dayna@epa.gov)

Communications

Office of Research and Development

U.S. Environmental Protection Agency



**To:** Milbourn, Cathy[Milbourn.Cathy@epa.gov]; Hull, George[Hull.George@epa.gov]  
**Cc:** Hubbard, Carolyn[hubbard.carolyn@epa.gov]; Allen, Laura[Allen.Laura@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Fri 3/27/2015 5:06:49 PM  
**Subject:** latest updated QAs on FF  
[DRAFT QA FF shortlist v3 \(Autosaved\).docx](#)  
[FracFocus draft QAs 3-26-15 combined.docx](#)

Long (more QAs) and short versions.

**To:** Milbourn, Cathy[Milbourn.Cathy@epa.gov]; Hull, George[Hull.George@epa.gov]; Allen, Laura[Allen.Laura@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Fri 3/27/2015 4:44:58 PM  
**Subject:** Fwd: DRAFT QA FF shortlist v3 (Autosaved).docx  
[DRAFT QA FF shortlist v3 \(Autosaved\).docx](#)  
[ATT00001.htm](#)

Latest qas separated by topic.

Sent from my iPhone

Begin forwarded message:

**From:** "Gibbons, Dayna" <[Gibbons.Dayna@epa.gov](mailto:Gibbons.Dayna@epa.gov)>  
**Date:** March 27, 2015 at 11:00:10 AM EDT  
**To:** "Blackburn, Elizabeth" <[Blackburn.Elizabeth@epa.gov](mailto:Blackburn.Elizabeth@epa.gov)>  
**Subject:** DRAFT QA FF shortlist v3 (Autosaved).docx

Can you print 3 of these?

**To:** Blackburn, Elizabeth[Blackburn.Elizabeth@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Fri 3/27/2015 2:27:47 PM  
**Subject:** FracFocus draft QAs\_3-26-15 combined.docx  
[FracFocus draft QAs 3-26-15 combined.docx](#)  
[FracFocus press script v5 edits.docx](#)  
[general draft gas on assessment for ff call.docx](#)

Can you print 3 each of these? I'll be sending one more along in a bit.

**To:** Perry, Dale[Perry.Dale@epa.gov]; Hanley, Mary[Hanley.Mary@epa.gov]  
**Cc:** Purchia, Liz[Purchia.Liz@epa.gov]; Allen, Laura[Allen.Laura@epa.gov]; Hubbard, Carolyn[hubbard.carolyn@epa.gov]; Milbourn, Cathy[Milbourn.Cathy@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Mon 3/23/2015 8:58:33 PM  
**Subject:** FYI Draft materials for surface water paper -- not expected out till April  
[DRAFTSW Modeling Fact Sheet Science in Action 3.18.docx](#)  
[QsAs SWModeling revised 3-4-2015 dg\(2\).docx](#)  
[Desk Statement - SWModeling-revised 3-4-2015.docx](#)

Here are the draft communications materials for the surface water paper which went out for publication in a journal. All details attached.

Ex. 5

Ex. 5

202-564-7983

[gibbons.dayna@epa.gov](mailto:gibbons.dayna@epa.gov)

Communications

Office of Research and Development

U.S. Environmental Protection Agency

**To:** Perry, Dale[Perry.Dale@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Wed 3/18/2015 2:41:38 PM  
**Subject:** HF NGA NR Committee Comments v3 jb kytdgCLEAN.docx  
HF NGA NR Committee Comments v3 jb kytdgCLEAN.docx

So—can you pull from this?

to have the details you need now....

**Ex. 5**

**To:** Bueno, Michael[Bueno.Michael@epa.gov]; Matthews, Lisa[Matthews.Lisa@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Thur 3/12/2015 8:51:31 PM  
**Subject:** Document1  
[Document1.docx](#)

I can fill this out w more tps about the study if you'd like. Let me know.

**To:** Frithsen, Jeff[Frithsen.Jeff@epa.gov]  
**Cc:** Maloney, Kelsey[Maloney.Kelsey@epa.gov]  
**From:** Gibbons, Dayna  
**Sent:** Thur 3/12/2015 3:43:44 PM  
**Subject:** RE: HF: Study Project One-pagers  
[DRAFTSW Modeling Fact Sheet Science in Action dg.docx](#)  
[FracFocus FS 031215 FINAL.docx](#)  
[Toxicity FS 031215.docx](#)  
[SW Modeling FS 031215.docx](#)  
[Case Study TX FS 031215.docx](#)  
[Case Study SWPA FS 031215.docx](#)  
[Case Study Raton Basin FS 031215.docx](#)  
[Case Study NEPA FS 031215.docx](#)  
[Case Study ND FS 031215.docx](#)  
[LBNL FS 031215.docx](#)  
[Water availability FS 031215.docx](#)  
[Spills FS 031215.docx](#)  
[Source apportionment FS 031215.docx](#)

Here's what we have now. Please note there are 2 versions of the surface water fs. The one w my initials was sent to cindy and kelly for review.

The case studies and source apportionment are old.

**From:** Frithsen, Jeff  
**Sent:** Thursday, March 12, 2015 8:03 AM  
**To:** Gibbons, Dayna  
**Subject:** HF: Study Project One-pagers

Dayna:

What is the status of the communication materials for the individual ORD HF study research projects? Do we have "one-pagers" prepared for each? Can you share?

Thanks.

Jeff

Jeffrey B. Frithsen, Ph.D.

National Center for Environmental Assessment

Office of Research and Development

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue, SW (8623-P)

Washington, DC 20460

703-347-8623 (office phone)

Physical Office Address/Overnight Deliveries

Two Potomac Yard (North Building), Room N-7741

2733 South Crystal Drive, Arlington, VA 22202



**To:** jblasiak@washgas.com[jblasiak@washgas.com]  
**From:** Maloney, Kelsey  
**Sent:** Tue 2/24/2015 6:51:04 PM  
**Subject:** RE: Form submission from: EPA's Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources Contact Us about EPA's Hydraulic Fracturing Study form

Thank you for your email and interest in EPA's Study of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources. The careful and intensive review and synthesis of existing scientific literature, EPA research results, and ongoing stakeholder input is necessary to ensure that EPA's draft science assessment is as complete as possible. New EPA peer reviewed papers reflecting research that was conducted in support of the study have been posted online and are available [here](#). EPA is working to capture the state of the science in the draft assessment. We plan to issue the draft assessment in early 2015.

Additionally, the [Federal Multiagency Collaboration on Unconventional Oil and Gas Research](#) is a collaborative effort to address the highest priority challenges associated with safely and prudently developing important unconventional oil and gas domestic onshore resources. Read the multiagency research strategy [here](#). The Agencies identified seven broad topic areas of research including air quality and greenhouse gas emissions.

-----Original Message-----

**From:** drupal\_admin@epa.gov [mailto:drupal\_admin@epa.gov] On Behalf Of Jim  
**Sent:** Wednesday, February 18, 2015 8:59 AM  
**To:** Maloney, Kelsey  
**Subject:** Form submission from: EPA's Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources Contact Us about EPA's Hydraulic Fracturing Study form

Submitted on 02/18/2015 8:59AM

Submitted values are:

Name: Jim

Email: [jblasiak@washgas.com](mailto:jblasiak@washgas.com)

Comments:

Kelsey,

When do expect the final Hydraulic Fracking Study to be completed? Also, are there other studies ongoing related to Fracking, such as a review of air quality/greenhouse gases and fracking?

Jim

Web Area: EPA's Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources

**To:** jimlanders@bellsouth.net[jimlanders@bellsouth.net]  
**From:** Maloney, Kelsey  
**Sent:** Thur 2/19/2015 8:45:29 PM  
**Subject:** RE: Form submission from: EPA's Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources Contact Us about EPA's Hydraulic Fracturing Study form

Thank you for your email and interest in EPA's Study of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources. The careful and intensive review and synthesis of existing scientific literature, EPA research results, and ongoing stakeholder input is necessary to ensure that EPA's draft science assessment is as complete as possible. New EPA peer reviewed papers reflecting research that was conducted in support of the study have been posted online and are available [here](#). EPA is working to capture the state of the science in the draft assessment. We plan to issue the draft assessment in early 2015.

-----Original Message-----

From: drupal\_admin@epa.gov [mailto:drupal\_admin@epa.gov] On Behalf Of Jim Landers  
 Sent: Tuesday, February 17, 2015 3:37 PM  
 To: Maloney, Kelsey  
 Subject: Form submission from: EPA's Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources Contact Us about EPA's Hydraulic Fracturing Study form

Submitted on 02/17/2015 3:36PM

Submitted values are:

Name: Jim Landers

Email: [jimlanders@bellsouth.net](mailto:jimlanders@bellsouth.net)

Comments: My understanding was that the EPA would issue some final findings on its hydraulic fracturing study in 2014. As of this writing (February

2015) I have not been able to find anything on the final findings. Have they been completed yet, and if not, do you have a projected date for their completion? Thanks, Jim Landers Web Area: EPA's Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources

**To:** Purchia, Liz[Purchia.Liz@epa.gov]  
**From:** Jeff Brady  
**Sent:** Fri 6/5/2015 7:45:00 PM  
**Subject:** RE: EPA Releases Draft Assessment on the Potential Impacts to Drinking Water Resources from Hydraulic Fracturing Activities

Howdy,

Is there an estimate when the draft assessment will be finalized?

Jeff Brady | NPR Correspondent | [jbrady@npr.org](mailto:jbrady@npr.org) | 202-513-3414 | [@jeffbradynpr](https://twitter.com/jeffbradynpr)

**From:** Purchia, Liz [mailto:Purchia.Liz@epa.gov]  
**Sent:** Thursday, June 04, 2015 11:53 AM  
**To:** Purchia, Liz  
**Cc:** Harrison, Melissa  
**Subject:** EPA Releases Draft Assessment on the Potential Impacts to Drinking Water Resources from Hydraulic Fracturing Activities

**For Immediate Release**

June 4<sup>th</sup>, 2015

## **EPA Releases Draft Assessment on the Potential Impacts to Drinking Water Resources from Hydraulic Fracturing Activities**

*Assessment shows hydraulic fracturing activities have not led to widespread, systemic impacts to drinking water resources and identifies important vulnerabilities to drinking water resources.*

**WASHINGTON**—The Environmental Protection Agency (EPA) is releasing a draft assessment today on the potential impacts of hydraulic fracturing activities on drinking water resources in the United States. The assessment, done at the request of Congress, shows that while hydraulic fracturing activities in the U.S. are carried out in a way that have not led to widespread, systemic impacts on drinking water resources, there are potential vulnerabilities in the water lifecycle that could impact drinking water. The assessment follows the water used for hydraulic fracturing from water acquisition, chemical mixing at the well pad site, well injection of fracking fluids, the collection of hydraulic fracturing wastewater (including flowback and produced water), and wastewater treatment and disposal [<http://www2.epa.gov/hfstudy/hydraulic-fracturing-water-cycle>].

“EPA’s draft assessment will give state regulators, tribes and local communities and industry around the country a critical resource to identify how best to protect public health and their drinking water resources,” said **Dr. Thomas A. Burke, EPA’s Science Advisor and Deputy Assistant Administrator of EPA’s Office of Research and Development**. “It is the most complete compilation of scientific data to date, including over 950 sources of information, published papers, numerous technical reports, information from stakeholders and peer-reviewed EPA scientific reports.”

EPA’s review of data sources available to the agency found specific instances where well integrity and waste water management related to hydraulic fracturing activities impacted drinking water resources, but they were small compared to the large number of hydraulically fractured wells across the country. The report provides valuable information about potential vulnerabilities, some of which are not unique to hydraulic fracturing, to drinking water resources, but was not designed to be a list of documented impacts.

These vulnerabilities to drinking water resources include:

- water withdrawals in areas with low water availability;
- hydraulic fracturing conducted directly into formations containing drinking water resources;
- inadequately cased or cemented wells resulting in below ground migration of gases and liquids;
- inadequately treated wastewater discharged into drinking water resources;
- and spills of hydraulic fluids and hydraulic fracturing wastewater, including flowback and

produced water.

Also released today were nine peer-reviewed EPA scientific reports ([www.epa.gov/hfstudy](http://www.epa.gov/hfstudy)). These reports were a part of EPA's overall hydraulic fracturing drinking water study and contributed to the findings outlined in the draft assessment. Over 20 peer-reviewed articles or reports were published as part of this study [<http://www2.epa.gov/hfstudy/published-scientific-papers>].

States play a primary role in regulating most natural gas and oil development. EPA's authority is limited by statutory or regulatory exemptions under the Clean Water Act, Safe Drinking Water Act, the Comprehensive Environmental Response, Compensation and Liability Act, and the Resource Conservation and Recovery Act. Where EPA's exemptions exist, states may have authority to regulate unconventional oil and gas extraction activities under their own state laws.

EPA's draft assessment benefited from extensive stakeholder engagement conducted across the country with states, tribes, industry, non-governmental organizations, the scientific community and the public to ensure that the draft assessment reflects current practices in hydraulic fracturing and utilizes all data and information available to the agency.

The study will be finalized after review by the Science Advisory Board and public review and comment. The Federal Register Notice with information on the SAB review and how to comment on the draft assessment will be published on Friday June 5, 2015.

For a copy of the study, visit [www.epa.gov/hfstudy](http://www.epa.gov/hfstudy).

To submit comments on the report, see [www.epa.gov/sab](http://www.epa.gov/sab).

**From:** Purchia, Liz

**Sent:** Thursday, June 04, 2015 11:45 AM

**To:** Purchia, Liz

**Cc:** Harrison, Melissa

**Subject:** 1:00PM: EPA to Hold Media Conference Call on Study of Hydraulic Fracturing Activities on Drinking Water Resources

Wanted to give you a heads up on a call we're holding at 1pm to discuss our study of the potential impacts to drinking water from hydraulic fracturing activities.

Shortly, you'll be receiving the release and the website will be live at [www.epa.gov/hfstudy](http://www.epa.gov/hfstudy).

**FOR IMMEDIATE RELEASE**

June 4, 2015

## **TODAY: EPA to Hold Media Conference Call on Study of Hydraulic Fracturing Activities on Drinking Water Resources**

**WASHINGTON** – Environmental Protection Agency (EPA) officials will deliver remarks about the agency's study on potential impacts to drinking water resources in the United States from hydraulic fracturing activities, as requested by Congress, on a media call today at 1:00 p.m. Eastern Time.

**WHAT:** Tom Burke, Science Advisor and Deputy Assistant Administrator of EPA's Office of Research and Development, EPA, to deliver remarks about the agency's study.

**WHEN:** 1:00 p.m. EDT

**Call-in Number:** (888) 217-1175 \*\*

**Conference ID:** 60270794

**\*\*To join the call, all participants will be required to provide their first and last name, news outlet affiliation, and email address.**

**Please call in ten minutes prior to start of call to allow sufficient time to gather information**

R130

Liz Purchia

Deputy Associate Administrator, Public Affairs

U.S. Environmental Protection Agency

Office: 202-564-6691

Cell: 202-841-2230



**To:** Benenati, Frank[Frank\_J\_Benenati@who.eop.gov];  
Candace\_M\_Vahlsing@who.eop.gov[Candace\_M\_Vahlsing@who.eop.gov]  
**Cc:** Allen, Laura[Allen.Laura@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]  
**From:** Purchia, Liz  
**Sent:** Wed 6/3/2015 9:17:07 PM  
**Subject:** FW: HF\_Draft Press Release (v13\_6 3 15).docx  
[HF\\_Draft Press Release \(v13\\_6 3 15\).docx](#)

This is for posting at 12 tomorrow with a press call at 1.

**From:** Allen, Laura  
**Sent:** Wednesday, June 03, 2015 5:12 PM  
**To:** Reynolds, Thomas; Purchia, Liz  
**Subject:** HF\_Draft Press Release (v13\_6 3 15).docx

Here is the latest press release with ORD edits and Tom's earlier edits.

**To:** Allen, Laura[Allen.Laura@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]  
**From:** Purchia, Liz  
**Sent:** Wed 6/3/2015 9:07:31 PM  
**Subject:** FW: Edits to timeline  
[fracking timeline infographic3.pdf](#)

I'm ok with them posting this.

Tom – are you?

**From:** Gibbons, Dayna  
**Sent:** Wednesday, June 03, 2015 4:40 PM  
**To:** Purchia, Liz  
**Cc:** Perry, Dale; Matthews, Lisa  
**Subject:** FW: Edits to timeline

Are you okay w us posting this tomorrow? SAB has reviewed

**From:** Chagolla, Armando  
**Sent:** Wednesday, June 03, 2015 3:55 PM  
**To:** Gibbons, Dayna  
**Subject:** RE: Edits to timeline

Thoughts?

**From:** Gibbons, Dayna  
**Sent:** Wednesday, June 03, 2015 3:04 PM  
**To:** Chagolla, Armando  
**Subject:** RE: Edits to timeline

Armando—this does not include all the edits I sent you.

**From:** Chagolla, Armando  
**Sent:** Wednesday, June 03, 2015 2:22 PM  
**To:** Gibbons, Dayna; Hanlon, Edward  
**Subject:** RE: Edits to timeline

See attached timeline with updates. I also added (top left corner) a small disclaimer of when the timeline was updated. I think it's smart just in case any dates change. Thoughts?

-Armando

**From:** Gibbons, Dayna  
**Sent:** Wednesday, June 03, 2015 10:42 AM  
**To:** Hanlon, Edward; Chagolla, Armando  
**Subject:** Edits to timeline

Thank you!!

**Ex. 5**

Armando is our graphic designer who is making the changes

**From:** Hanlon, Edward  
**Sent:** Wednesday, June 03, 2015 10:40 AM  
**To:** Gibbons, Dayna  
**Subject:** RE: Please review asap for accuracy.

Hi Dayna,

Here are my comments; thx, Ed:

# Ex. 5

\*\*\*\*\*

Ed Hanlon

Designated Federal Officer

EPA Science Advisory Board Staff Office

202-564-2134 (phone/voice mail)

202-565-2098 (fax)

202-564-2221 (SAB main number)

[hanlon.edward@epa.gov](mailto:hanlon.edward@epa.gov)

Regular mail: USEPA Science Advisory Board (1400R), 1200 Pennsylvania Ave., N.W.,  
Washington, D.C. 20460

Office location/Courier Address: USEPA Science Advisory Board, Ronald Reagan Building,  
1300 Pennsylvania Avenue, NW, Suite 31150, Washington, D.C. 20460

**From:** Gibbons, Dayna  
**Sent:** Wednesday, June 03, 2015 10:09 AM  
**To:** Hanlon, Edward  
**Subject:** FW: Please review asap for accuracy.

PLEASE take a look at how we represent the SAB steps at the bottom and make sure youre ok w it.

**From:** Chagolla, Armando  
**Sent:** Tuesday, June 02, 2015 5:49 PM  
**To:** Gibbons, Dayna  
**Cc:** Maloney, Kelsey  
**Subject:** RE: Please review asap for accuracy.

Kelsey gave me a few more changes. Will continue to work on the version without a color background.

**From:** Gibbons, Dayna  
**Sent:** Tuesday, June 02, 2015 10:54 AM  
**To:** Chagolla, Armando  
**Cc:** Maloney, Kelsey  
**Subject:** FW: Please review asap for accuracy.

Here you go!!

**From:** Briskin, Jeanne  
**Sent:** Tuesday, June 02, 2015 8:10 AM  
**To:** Gibbons, Dayna; Matthews, Lisa; Frithsen, Jeff  
**Subject:** RE: Please review asap for accuracy.

**From:** Gibbons, Dayna  
**Sent:** Monday, June 01, 2015 4:54 PM  
**To:** Matthews, Lisa; Frithsen, Jeff; Briskin, Jeanne  
**Subject:** Please review asap for accuracy.

PLEASE REVIEW THIS NEW HF STUDY TIMELINE FOR ACCURACY. Would love to get this done in time for the release.

**To:** Allen, Laura[Allen.Laura@epa.gov]; Gibbons, Dayna[Gibbons.Dayna@epa.gov]; Perry, Dale[Perry.Dale@epa.gov]; Valentine, Julia[Valentine.Julia@epa.gov]  
**From:** Purchia, Liz  
**Sent:** Wed 6/3/2015 12:54:05 PM  
**Subject:** HF\_Draft Press Release (v10\_6 2 15).docx  
[HF\\_Draft Press Release \(v10\\_6 2 15\).docx](#)

Attached are additional edits

**To:** Gibbons, Dayna[Gibbons.Dayna@epa.gov]; Allen, Laura[Allen.Laura@epa.gov]; Perry, Dale[Perry.Dale@epa.gov]  
**From:** Purchia, Liz  
**Sent:** Tue 6/2/2015 3:45:32 PM  
**Subject:** RE: HF\_Draft Press Release (v9\_6 1 15)ord (2).docx  
HF\_Draft Press Release (v9\_6 1 15)ord (2).docx

A few more edits/comments

**From:** Gibbons, Dayna  
**Sent:** Tuesday, June 02, 2015 10:47 AM  
**To:** Allen, Laura; Purchia, Liz; Perry, Dale  
**Subject:** HF\_Draft Press Release (v9\_6 1 15)ord (2).docx

Made changes and added context. Are we okay?



**To:** Allen, Laura[Allen.Laura@epa.gov]  
**From:** Purchia, Liz  
**Sent:** Mon 6/1/2015 1:10:05 PM  
**Subject:** HF\_Draft Press Release (v9\_5\_28\_15)ord.docx  
HF\_Draft Press Release (v9\_5\_28\_15)ord.docx

Edits attached

**To:** Reynolds, Thomas[Reynolds.Thomas@epa.gov]  
**Cc:** Gibbons, Dayna[Gibbons.Dayna@epa.gov]  
**From:** Hubbard, Carolyn  
**Sent:** Mon 6/8/2015 6:06:56 PM  
**Subject:** Thank You!

Tom,

Thanks to you and your team for the ongoing support you gave us in the months leading up to the release of the draft hydraulic fracturing study assessment. Dale, Liz and Laura have been meeting with us weekly since November 2014 to prepare the messages and materials for the various EPA peer reviewed reports and the draft assessment. Together we have grappled with messages, brainstormed tough questions and done what we could to make sure the materials were understandable and accessible to the public.

Particularly, Dale has played a critical role—acting as a liaison to the public affairs team, an ongoing reviewer of communications materials, and a constant sounding board. Her presence and persistence helped build a real team comprised of ORD and OPA for this release.

I look forward to continuing this level of collaboration in future rollouts!

Carolyn Hubbard

Science Communications

EPA Office of Research and Development

202-564-2189

hubbard.carolyn@epa.gov

**To:** Reynolds, Thomas[Reynolds.Thomas@epa.gov]  
**From:** Warrick, Joby  
**Sent:** Thur 6/4/2015 2:05:37 PM  
**Subject:** Re: rule-pahlooza

got it -- that's a big help, thanx much. will post after 11:45 and sit in on call later.

Sent from my iPad

On Jun 4, 2015, at 9:42 AM, Reynolds, Thomas <[Reynolds.Thomas@epa.gov](mailto:Reynolds.Thomas@epa.gov)> wrote:

Here is press release embargoed until 1145 am. There are no links in here because materials wont be live on website until 1145, so it's probably not a huge help, but gives you an overview of what we will be focusing on. Press call is slated for 1 pm.

### **Final Press Release**

## **EPA Releases Draft Study on the Potential Impacts to Drinking Water Resources from Hydraulic Fracturing Operations**

*Assessment shows operations have not led to widespread, systemic impacts to drinking water resources but identifies important vulnerabilities in water cycle*

**WASHINGTON**—The Environmental Protection Agency (EPA) is releasing a draft assessment today on the potential impacts of hydraulic fracturing operations on drinking water resources in the United States. The assessment, done at the request of Congress, shows that while hydraulic fracturing operations in the U.S. are carried out in a way that have not led to widespread, systemic impacts on drinking water resources, there are potential vulnerabilities in the water lifecycle that could impact drinking water. The assessment follows the water used for hydraulic fracturing from water acquisition, chemical mixing at the well pad site, well injection of fracking fluids, the collection of hydraulic fracturing wastewater, and wastewater treatment and disposal. [LINK TO GRAPHIC].

“EPA’s draft study will give state regulators, tribes and local communities and industry around the country a critical resource to identify how best to protect public health and their drinking water resources,” said **Dr. Thomas A. Burke, EPA’s Science Advisor and Deputy Assistant Administrator of EPA’s Office of Research and Development**. “It is the most complete compilation of scientific data to date, including over 950 sources of information, published papers, numerous technical reports, information from stakeholders

and peer-reviewed EPA scientific reports.”

EPA’s review of all data sources available to the agency found specific instances where hydraulic fracturing impacted drinking water resources, but they were small compared to the large number of hydraulically fractured wells across the country. The report provides valuable information about potential vulnerabilities to drinking water resources, but was not designed to be a list of documented impacts.

These vulnerabilities include:

- [\[ADD LINK\]](#) water withdrawals in areas with low water availability;
- [\[ADD LINK\]](#) hydraulic fracturing conducted directly into formations containing drinking water resources;
- [\[ADD LINK\]](#) inadequately cased or cemented wells resulting in below ground migration of gases and liquids;
- [\[ADD LINK\]](#) inadequately treated wastewater discharged into drinking water resources;
- [\[ADD LINK\]](#) and spills of hydraulic fluids and hydraulic fracturing wastewater.

Also released today were nine peer-reviewed EPA scientific reports [\[ADD LINK\]](#) that contributed to the findings in the study. Over 20 peer-reviewed articles or reports were published as part of this study [\[LINK\]](#).

States play a primary role in regulating most natural gas and oil development. EPA’s authority is limited by statutory or regulatory exemptions under the Clean Water Act, Safe Drinking Water Act, the Comprehensive Environmental Response, Compensation and Liability Act, and the Resource Conservation and Recovery Act. Where EPA’s exemptions exist, states may have authority to regulate unconventional oil and gas extraction activities under their own state laws.

Throughout the development of the study, EPA conducted extensive stakeholder engagement across the country with states, tribes, industry, non-governmental organizations, the scientific community and the public to ensure that the draft assessment report reflects current practices in hydraulic fracturing and utilizes all available data and information.

The study will be finalized after review by the Science Advisory Board and public review and comment. It is open for public comment for 85 days. To review the study please go to: [\[ADD LINK\]](#). The Federal Register Notice with information on the SAB review and how to comment on the draft assessment will be published on Friday June 5, 2015.

**From:** Warrick, Joby [<mailto:Joby.Warrick@washpost.com>]  
**Sent:** Thursday, June 04, 2015 8:42 AM  
**To:** Reynolds, Thomas  
**Subject:** RE: rule-pahlooza

Hey—still on track RE today's thing? Will look for embargoed paper when it's ready.  
thanks again.

**From:** Warrick, Joby  
**Sent:** Wednesday, June 03, 2015 11:55 AM  
**To:** Reynolds, Thomas  
**Subject:** RE: rule-pahlooza

Office now—202 334 5603

**From:** Reynolds, Thomas [<mailto:Reynolds.Thomas@epa.gov>]  
**Sent:** Wednesday, June 03, 2015 11:54 AM  
**To:** Warrick, Joby  
**Subject:** Re: rule-pahlooza

What's best number to reach you?

Sent from my iPhone

On Jun 3, 2015, at 11:46 AM, "Warrick, Joby" <[Joby.Warrick@washpost.com](mailto:Joby.Warrick@washpost.com)> wrote:

Dunno how you keep up, with shit coming out at once in all directions, but, um... just for guidance? trucks next week? planes this week? or maybe both at once?

**To:** Allen, Laura[Allen.Laura@epa.gov]  
**Cc:** Purchia, Liz[Purchia.Liz@epa.gov]  
**From:** Reynolds, Thomas  
**Sent:** Thur 6/4/2015 3:08:12 PM  
**Subject:** USE THIS HF PRESS RELEASE  
HF Press Release FINAL FINAL TR.docx